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Investigation of Turbulence Generated by Upwind Blockages at the Inlet of a 1/50th-scale Model of the 80- by 120-Foot Wind Tunnel

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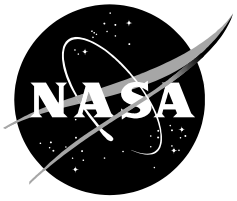

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

NOMENCLATURE

I_u	relative turbulence intensity in x-direction, $\sigma_u / \bar{u}$ (%)
I_v	relative turbulence intensity in y-direction, $\sigma_v / \bar{u}$ (%)
I_w	relative turbulence intensity in z-direction, $\sigma_w / \bar{u}$ (%)
I_{vel}	total relative turbulence intensity, $\sigma_{vel} / \overline{vel}$ (%)
u, v, w	velocity components in the x, y, and z directions respectively (m/s)
μ_u	mean velocity component in x-direction (m/s)
μ_v	mean velocity component in y-direction (m/s)
μ_w	mean velocity component in z-direction (m/s)
vel	instantaneous total velocity, $\sqrt{(u^2 + v^2 + w^2)}$ (m/s)
$\overline{vel}$	average total velocity (m/s)
σ_u	rms fluctuation in x-component of velocity (m/s)
σ_v	rms fluctuation in y-component of velocity (m/s)
σ_w	rms fluctuation in z-component of velocity (m/s)
σ_{vel}	rms fluctuation in total velocity (m/s)

INVESTIGATION OF TURBULENCE GENERATED BY UPWIND BLOCKAGES AT THE INLET OF A 1/50TH-SCALE MODEL OF THE 80- BY 120-FOOT WIND TUNNEL

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SUMMARY

A 1/50th-scale model of the 80- by 120-Foot Wind Tunnel (hereafter referred to as the 80x120) was used to determine the magnitude of turbulence caused by buildings located upstream of the wind tunnel inlet. The 1/50th-scale models of existing and proposed buildings were constructed to act as blockage for the test. Various inlet locations were sampled for turbulence intensity levels under a variety of blockage conditions including simple three-dimensional rectangular bodies creating quasi two-dimensional physics along the tunnel centerline, existing building structures in the vicinity of the full-scale wind tunnel inlet flow field, and proposed building structures that may someday be constructed at NASA Ames Research Center upwind of the inlet. The testing performed and reported in this report can be considered representative of quiescent atmospheric conditions that exist when operating the full-scale 80x120 at night.

At quiescent atmospheric conditions there is a measureable increase in turbulence intensity produced by upstream blockages. The blockages examined produced an average turbulence intensity level between 2 percent and 5 percent when measured at the inlet. Previous research has shown that the flow control of the 80x120 is capable of reducing this turbulence to less than 0.5 percent when measured in the test section. Additional research will need to be conducted to determine the influence of atmospheric wind on relative turbulence intensity at the inlet.

These results show that future buildings lying more than 1,000 feet upstream of the full-scale 80x120 inlet will have a negligible effect on the flow quality of the air entering the 80x120 test section under strictly quiescent atmospheric conditions. The Googleplex buildings modeled and tested in this experiment are located approximately 2,100 feet upstream and, as seen in this test campaign, have a negligible influence on the turbulence levels measured at the inlet under quiescent atmospheric conditions.

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INTRODUCTION

The National Full-Scale Aerodynamics Complex (NFAC) is a valuable national resource to the aerospace industry. The NFAC (Fig. 1) is a wind tunnel comprising two test sections with a common drive system. The smaller of the two, the 40- by 80-Foot Wind Tunnel (hereafter referred to as the 40x80), is a closed-circuit wind tunnel that is unaffected by surrounding buildings and landscape. The larger 80x120 test section, however, is part of an open-circuit wind tunnel that draws air into the facility through a large inlet. Since air is drawn into the tunnel from outside, the test section flow quality can be affected by the ambient air conditions outside of the tunnel, such as atmospheric winds and turbulence in the vicinity of the inlet. For the tunnel to provide accurate results during testing, it is necessary to minimize the effect of exterior turbulence to preserve flow quality in the test section.

In 1987, an internal NASA memo established a building exclusion zone in front of the 80x120 inlet. In 2004, a second memo was written waiving the building restriction but setting limitations on the heights of buildings in the 80x120 right-of-way to allow for future construction at NASA Ames Research Center near Building N-258 (Fig. 2). At the time this report was written, there are several buildings built in this exclusion zone, all of which adhere to the adjusted height requirements of the 2004 memo. In 2013, new construction began at NASA Ames near Building N-258 that, if completed, would not adhere to the height limitations set in the 2004 memo.

This report outlines an initial investigation undertaken during the summer of 2013 to assess the impact of the presence of new buildings in front of the inlet that may impact flow quality in the 80x120 test section. The testing was conducted using a 1/50th-scale model of the 80x120. The model was originally built in the 1970s to better understand the flow quality in the 80x120 due to external winds blowing over the facility. References 1 and 2 describe the design study that led to the initial selection of inlet geometry. Figure 3 shows the complete 1/50th-scale NFAC model and the simple egg-crate honeycomb inlet treatment that was used for the 1/50th-scale testing at that time. Figure 4 shows the test setup of the 1/50th-scale model in the 40x80 in 1976. Additional scale-model studies are described in Reference 3.

There was no attempt at that time to initially understand blockage effects from buildings in the vicinity of the inlet. This report presents results for several different building configurations and several wind tunnel test section air speeds. Velocity measurements were taken at the inlet of the model tunnel yielding turbulence intensity values on the plane of the 80x120 inlet. This report documents the testing performed in 2013 and provides a complete set of reduced turbulence data measurements. Reference 4 includes a selected subset of the data presented herein.

TEST FACILITY AND TEST HARDWARE

NFAC Wind Tunnel Complex

The test section of the 80x120 was selected as the best location to conduct this test because of its large size and controlled environment. The test section itself is approximately 80 feet high, 120 feet wide, and 120 feet long. The 1/50th-scale model was placed on the turntable of the test section, and the model buildings were arranged around the test section as necessary.

1/50th-Scale Model of the NFAC

The 1/50th-scale model of the NFAC can be configured as a complete model that includes the NFAC 40x80 circuit and NFAC drive system. Since the flow quality in the 80x120 segment is the focus of this testing, and to further simplify the operation of the 1/50th-scale model, the 40x80 circuit was not used in this test campaign. The only components that were used from the 1/50th-scale model were the 80x120 inlet with its cowling, contraction section, and test section (Fig. 5). Since the inlet flow treatment used for testing in the 1970s was not the as-built NFAC inlet, an "empty" inlet with no guide vanes, horizontal splitter plates, or aerodynamic flow treatment was used. The contraction itself was modified with straight interior walls to represent the tunnel in its existing configuration. In addition to these components, an expansion section downstream of the model test section was built to interface the test section to the drive fan being used to drive the model tunnel.

Drive Fan

The fan used to drive the 1/50th-scale tunnel was a single D/47 axial fan from the Chicago Blower Corporation (Fig. 6). The fan is rated to 40,000 cubic feet per minute, which translates to a maximum achievable speed of 53.6 meters per second (m/s) (104 knots) in the test section, meeting the 100-knot requirement for this experiment. Since the fan is 47 inches in diameter, a long transition section was built to keep the flow attached in the tunnel between the test section and the fan. A variable frequency drive was used to control the fan frequency, and therefore the air velocity, in the test section.

Series 100 Cobra Probe

A single Cobra probe was used to take velocity measurements at the inlet and in the test section of the 1/50th-scale wind tunnel. The position in the test section was first used to determine test section wind speed as a function of drive fan blower frequency. The Cobra probe is capable of measuring velocities between 2 m/s and 100 m/s with a resolution of 0.1 m/s. The Cobra probe provides velocity measurements in three directions: u, v, and w (Fig. 7). Further specifications for the Cobra probe are shown in Appendix A. All Cobra probe data in this report was acquired at 1,250 samples per second.

Figures 8–10 illustrate the positioning of the Cobra probe relative to the plane of the inlet, as well as the locations where velocity measurements were taken. The measurements were mapped over the face of the inlet using a grid system. Looking downstream, the grid consists of rows numbered from top to bottom, 1 through 5, and columns labeled from left to right, A through H. This mapping is shown in Figure 10.

The spacing between rows 4 and 5, and between columns A and B, is more compact than between the other rows and columns. The data acquisition in these areas is denser (in regard to the number of measurements per unit area) than the other regions because the majority of the existing and proposed blockages lie upstream from the left side of the inlet (looking downstream). The purpose of adding additional probe measurement locations here was to more accurately characterize the influence of the blockages on turbulence intensity at the inlet of the wind tunnel. Figure 11 shows the blockage positioned 4 feet in front of the inlet.

External Structures

Several different 1/50th-scale building configurations were constructed to simulate the existing and future external structures (Fig. 12) that will exist upstream of the inlet. These configurations are defined as follows:

1. No Blockages: no obstructions upstream of the inlet (baseline measurement).
2. Existing Blockages: the buildings north of the NASA Ames boundary in the city of Mountain View, and NASA Ames Buildings N-258 and T35A-C.
3. Future Blockages: existing blockages and the proposed Googleplex (Ref. 5).

These configurations allowed for a quantitative study on how the existence of buildings affect the functionality of the NFAC and the inflow turbulence at the inlet.

The configuration of the Googleplex was approximated from a picture published in *Vanity Fair* (Ref. 5) and shown in Figure 13. In this figure, the current buildings can be seen beyond the Googleplex buildings. The Googleplex consists of nine angular buildings that were approximated to be seven stories tall (1.4 feet at 1/50th scale). The model buildings were constructed using foam-core board. Error in placement of the buildings was ±1 inch (approximately ±4 feet at full scale). A top-view size and relative location of the Googleplex buildings is shown in Figure 14. A schematic of existing buildings and future proposed buildings (Configuration 3) is shown in Figure 15.

TEST PROCEDURE

Testing was conducted in the test section of the full-scale 80x120. Testing was performed with Vane Set 4 closed (NFAC in 40x80 configuration). Testing was conducted during the day, and there was no attempt to control slight recirculation effects within the full-scale test section. Sources of recirculation that went uncontrolled included the fan blower exhaust, atmospheric winds entering the test section through the inlet, and thermally induced wind drafts due to full-scale 80x120 wall temperature differentials. The computer station responsible for data acquisition was positioned adjacent to the test section, identical to the setup used in Reference 4 (Fig. 16). An assessment of the effect of the location of the computer station on the flow quality at the inlet was performed using a smoke test and concluded that the effects of this positioning were negligible.

Before testing began, the model wind tunnel drive blower needed to be calibrated to produce wind speeds of 50 knots and 100 knots in the test section of the 1/50th-scale 80x120. This was done by placing the Cobra probe in the test section of the 1/50th-scale model and measuring the test section wind speed while varying the frequency of the blower. The frequencies found to produce 50-knot and 100-knot wind speeds were 25 Hz and 50 Hz, respectively. The full calibration is recorded in Table 1.

TESTING SEQUENCE

The following tests were conducted after the initial calibration of the blower was complete. The Run Log, together with the acquired data, are summarized in Appendix B. The following test scenarios were conducted to determine the influence of blockages on the turbulence measured at the inlet of the 1/50th-scale 80x120. The testing was conducted in the following order:

1. Baseline Measurements (Configuration 1).
2. Blower Frequency Survey (Configuration 3).
3. Initial Inlet Survey.
4. Abbreviated 50-Hz Inlet Survey.
5. Abbreviated 25-Hz Inlet Survey.
6. Initial 2D Blockage Study.
7. Limited Wind-On Study.
8. Final Centerline Measurements.

1. Baseline Measurements: Runs 1–31

The blower frequency was set to 50 Hz for all runs except for runs 2 and 31, which were wind-off zero-airspeed (WOZ) runs. No external structures were present at this phase of the testing (Configuration 1). These runs establish a baseline for the turbulence level that the tunnel would expect to see under normal operation when there is no upstream blockage.

2. Frequency Survey: Runs 32–42

The blower frequency was varied between 13, 20, 30, 40, 45, and 50 Hz. The blockage configuration for this phase of testing consisted of the Googleplex and the Mountain View buildings (Configuration 3). The location of the inlet probe was not recorded for these runs, but it is assumed that the Cobra probe was located at the inlet centerline (E3). These runs were intended to compare the readings taken by a Cobra probe and an Alnor anemometer in the test section. While the test section data is unavailable, inlet data was taken and gives insight to the turbulence levels at the inlet during operation at the airspeeds correlated to the blower frequencies above.

3. Initial Inlet Survey: Runs 44–167

The initial inlet survey consists of two sets of runs at 50-Hz blower frequency and one set of runs at 25-Hz blower frequency. Runs 44–110 have a blockage configuration that includes all of the buildings: the Googleplex, the Mountain View Complex, N-258, and T-35A-C (Configuration 3). Runs 111–167 include all the buildings except for the Googleplex (Configuration 2). The details for specific runs are described below in further detail:

- Runs 44–78 were conducted at a blower frequency of 50 Hz, and 26 inlet stations were sampled.
- Run 79 was a velocity decay study where the blower frequency was set at 50 Hz, and then turned off. Data was collected continuously as the blower frequency decayed from 50 Hz to 0 Hz.

- Runs 80–107 were conducted at a blower frequency of 25 Hz and sampled various stations across the inlet.
- Run 108 was performed with a blower frequency of 42 Hz.
- Run 109 was a velocity decay study where the blower frequency was set at 42 Hz and then turned off. Data was collected continuously as the blower frequency decayed from 42 Hz to 0 Hz. This run had a 3-minute sampling period.
- Runs 110–139 were conducted at a blower frequency of 50 Hz, and 29 inlet stations were sampled.
- Run 140 was a velocity decay study where the blower frequency was set to 40 Hz and then turned off. Data was collected continuously as the blower frequency decayed from 40 Hz to 0 Hz. This run had a 2-minute record length.
- Runs 141–145 were conducted at 50 Hz, with the probe located at the centerline of the inlet. These runs were conducted to determine the time delay between the start-up of the blower and the time for the wind tunnel to reach a steady-state operating condition. To determine the required time delay, a delay between when the blower frequency was set to 50 Hz and the beginning of data acquisition was varied between 0 seconds and 120 seconds. This delay was followed by a 2-minute sampling period to characterize the velocity at the centerline of the inlet. Specifically, run 141 has no delay in beginning the 2-minute record, and the delay increases by 30 seconds each run up to 120-seconds delay in run 145 in beginning the 2-minute record.
- Runs 146 and 147 were conducted to determine whether standing on the plywood laid in front of the inlet would affect data collection. This data is not considered critical to the entire dataset.
- Run 148 was conducted with a blower frequency of 50 Hz with the probe on the inlet centerline. This run has a 6-minute record length.
- Runs 149–167 were conducted with a blower frequency of 50 Hz and 18 inlet stations were sampled.

4. Abbreviated 50-Hz Inlet Survey: Runs 207–227

The blower frequency was set to 50 Hz. The blockage configuration was with no blockage (Configuration 1) and 21 inlet stations were sampled.

5. Abbreviated 25-Hz Inlet Survey: Runs 228–245

The blower frequency was set to 25 Hz. The blockage configuration was with no blockage (Configuration 1) and 18 inlet stations were sampled.

6. Initial 2D Blockage Study: Runs 246–271

The initial 2D study was designed to determine turbulence levels coming from a worst-case situation of a two-dimensional blockage. The blockage consisted of several 1-foot-tall sections of U-channel that spanned 36 feet across the test section. The blockage was first set at 1 foot in front of the inlet and then moved to 2 feet, 4 feet, and 8 feet ahead of the inlet. Typical uncertainty in blockage placement for these runs is ±1 inch. These runs were later repeated and

expanded upon to form their own report in Runs 327–351 (not reported here but reported in Reference 4).

7. Limited Wind-On Study: Runs 272–276

The wind-on study was in conjunction with operation of the full-scale drive system. Runs 272 and 273 were performed in preparation for the wind-on testing. For these runs the blower frequency was set to 40 Hz and the full-scale tunnel's turntable was yawed to 33 degrees. These runs have a blockage configuration that includes all of the buildings: the Googleplex, the Mountain View Complex, N-258, and T-35A-C (Configuration 3). This 33-degree-yaw orientation placed the buildings directly upwind in the full-scale test section of the wind tunnel model. The Cobra probe was placed at the tunnel centerline for the one successful run and oriented to be aligned with the side wall of the tunnel. In the first three runs the full-scale tunnel did not successfully start, but in the fourth run (run 276) the tunnel did start and provided 17-knots ambient wind. This airspeed was determined by a handheld anemometer at a location where it was assumed that the model wind tunnel in draft would have negligible effects.

8. Final Centerline Measurements: Runs 277–326

The final centerline measurements incorporated all three building configurations tested with the blower frequency at both 25 Hz and 50 Hz. These runs were all performed with the probe at the centerline (E3) of the tunnel inlet. Each blockage configuration was tested in three sets of two runs (see Appendix B).

RESULTS

The data collected in the testing outlined above has been organized into Appendices B and C of this report. Appendix B contains a tabulated summary of the data collected from each run. This allows for a direct comparison of the runs. Appendix C contains a complete data analysis for each run conducted. The organization and nomenclature of each appendix is described below. A discussion of this data then follows in the next section of this report.

Organization of Appendix B

The results in Appendix B have been organized to be consistent with the data presented in Reference 4. In particular, runs 327–351 are discussed in great detail in Reference 4. Appendix B is organized as follows:

Run Information – general information pertaining to the run and its configuration.

- Run #.
- Date/Time of Run.
- External Structures – the presence or absence of upwind structures and blockages.
- Blower Frequency (Hz) – the operating frequency of the drive fan during the run.
- Probe Location – location of the Cobra probe corresponding to Figure 9.

Total Velocity Run Data – total velocity data averaged over the entire run.

- Mean (m/s) – the average total velocity ($\overline{vel}$) for each run.
- St Dev (m/s) – rms fluctuation in total velocity (σ_{vel}) for each run.

Averaged 10-Second Interval Data – the average of the means for data collected during each 10-second interval.

- Mean (m/s) – average total velocity ($\overline{vel}$) data for each interval.
- St Dev (m/s) – average of each interval's rms fluctuation in total velocity (σ_{vel}).
- I_{vel} (%) – the average of each intervals total relative turbulence intensity (σ_{vel} / $\overline{vel}$).

Organization of Appendix C

Appendix C provides a more thorough data analysis than Appendix B. It specifically gives insights into the statistics of each data acquisition run by analyzing each 10-second interval of data acquisition. It presents tabulated data and graphs to help visualize the data collected for each of the runs. Appendix C is organized as follows:

Run information, three tables, and three figures are provided for each run.

Run Information – information on the run configuration and the time it was conducted.

- Run #.
- Blockage Condition – external structures condition type.
- Blower Frequency (Hz) – operating frequency of drive fan during run.
- Inlet Probe Location – location of the Cobra probe corresponding to Figure 9.
- First Sample Date – date at which the run was conducted.
- First Sample Time – time at which data collection commenced.

Table 1. Total velocity and velocity component data for entire run.

- Velocity (Total Velocity, u, v, w):
    - Max (m/s) – maximum instantaneous velocity (vel) data point from run.
    - Min (m/s) – minimum instantaneous velocity (vel) data point from run.
    - Mean (m/s) – average instantaneous velocity (vel) data point from run.
    - St Dev (m/s) – rms fluctuation in total velocity (σ_{vel}) from run.

Table 2. Total velocity data for each interval with turbulence intensity.

- For each interval:
    - Max (m/s) – maximum instantaneous total velocity (vel) in a 10-second interval.
    - Min (m/s) – minimum instantaneous total velocity (vel) in a 10-second interval.
    - Mean (m/s) – average total velocity ($\overline{vel}$) per 10-second interval.
    - St Dev (m/s) – rms fluctuation in total velocity (σ_{vel}) per 10-second interval.
    - I_{vel} (%) – total relative turbulence intensity (σ_{vel} / $\overline{vel}$) per 10-second interval.
    - # Zero Values – number of zero values per 10-second interval.
    - % Zero Values – percentage of values that were zero in 10-second intervals.
        - Average – averages of the mean, St Dev, and $I_{vel.}$
        - St Dev – standard deviation of the mean, St Dev, and $I_{vel.}$

Table 3. Velocity component data for each interval with turbulence intensity.

- For each interval:
    - μ_u (m/s) – mean velocity component in x-direction (m/s).
    - μ_v (m/s) – mean velocity component in y-direction (m/s).
    - μ_w (m/s) – mean velocity component in z-direction (m/s).

- σ_u (m/s) – rms fluctuation in x-component of velocity (m/s).
- σ_v (m/s) – rms fluctuation in y-component of velocity (m/s).
- σ_w (m/s) – rms fluctuation in z-component of velocity (m/s).
- I_u (%) – relative turbulence intensity in x-direction, $\sigma_u / \bar{u}$ (%).
- I_v (%) – relative turbulence intensity in y-direction, $\sigma_v / \bar{u}$ (%).
- I_w (%) – relative turbulence intensity in z-direction, $\sigma_w / \bar{u}$ (%).

Figure 1. Velocity histogram for each interval (100 bins).

- Total velocity (m/s) versus frequency (Hz) with 100 bins.

Figure 2. Velocity histogram for each interval (25 bins).

- Total velocity (m/s) versus frequency (Hz) with 25 bins.

Figure 3. Total velocity measurements.

a) Average velocity and standard deviation about the average velocity.
b) RMS velocity fluctuation and standard deviation (m/s) about the average RMS velocity fluctuation (m/s).
c) Average velocity (m/s) from each 10-second interval.

DISCUSSION

From the initial runs with no blockages, Baseline Measurements (Configuration 1), the acquired data trends toward a higher turbulence intensity at the left most side of the 80x120 inlet than the middle and right side of the inlet (when viewed from upwind of the inlet). When the blower is on, the maximum relative turbulence intensity measured at the untreated inlet is 5.72 percent, which is significant since the turbulence intensity in the test section of a wind tunnel should typically be 0.5 percent or less for nominal testing conditions. The effectiveness of the flow control at reducing turbulence in the full-scale 80x120 test section was reported in Reference 6, which has shown that the flow control is capable of reducing the turbulence intensity in the test section to below 0.5 percent when the drive system is pulling 100 knots in the full-scale test section.

These results were validated on a smaller scale through the research reported in References 4 and 7. As documented in Reference 4, when a 1-foot blockage is placed 4 feet upwind of the inlet, the average relative turbulence intensity at the inlet is just over 3 percent. The same blockage configuration measured in the test section with inlet flow treatment (Ref. 7) shows an average turbulence intensity of less than 0.3 percent. The effectiveness of the inlet flow treatment coupled with the relatively slow acceleration of air through the contraction is extremely effective at dissipating turbulent flow that enters the 80x120 inlet from the external environment. From Reference 4, moving the 1-foot blockage farther and farther upwind from the inlet up to 20 feet upwind (Fig. 17) seems to indicate a threshold of about 8 feet beyond the inlet where the 1-foot blockage no longer influences the relative turbulence intensity at the inlet centerline. This corresponds to a 50-foot-tall blockage 400 feet full scale from the NFAC 80x120 inlet (approximately double the distance from the far edge of the lawn area shown in Figure 2).

The cause of the increased level in turbulence on the left side of the inlet when no buildings are present, however, needs to be further investigated. When the existing buildings were added to the setup (Configuration 2), the contour plot shown in Figure 19 again yields higher turbulence intensities along the left side of the inlet. This trend holds true for the testing conducted with all of the existing and future buildings present (Configuration 3) and is shown in Figure 20. The trends present in the data collected for the existing and future blockages are consistent with the location of the blockages relative to the plane of the inlet; upwind and primarily located on the left side of the inlet.

From the three contour plots shown in Figures 18, 19, and 20, comparisons can be made on how the flow quality at the inlet is affected by the presence of buildings upstream of the inlet. At first glance the contour plot in Figure 19 with just the existing buildings (Configuration 2) appears to have the highest amount of turbulence in the air flow. However, after examining the right side in further detail and comparing all three plots, the contour plot in Figure 20 (Configuration 3) has the highest turbulence intensity on both the right and left sides. The left side of the inlet has a slightly higher turbulence intensity with the addition of the Googleplex, which is expected since the Googleplex blockages are located upstream of the left side as seen in Figure 12. Note that the right side of the inlet experiences little to no increase in the turbulence between Configurations 2 and 3 (Figs. 19 and 20) because no additional blockages were added upstream of the right side of the inlet.

The data collected for relative turbulence intensity versus blower frequency measured at the centerline (E3) ranges from approximately 1.1 percent to 2.7 percent for turbulence intensities collected at 25-Hz and 50-Hz blower frequencies (Fig. 21). This data is from the averaged interval data for turbulence intensity and is shown in Appendix B and C, runs 277–326, in more detail. It is important to note that the Future Blockages (Configuration 3) had the highest turbulence intensity in this data for both the 25-Hz and 50-Hz frequencies. This leads to the conclusion that the buildings upstream do cause an increase in the turbulence intensity experienced at the inlet of the wind tunnel. Note, however, that the Future Blockages configuration also had the lowest turbulence intensity measured at both frequencies. The No Blockages configuration had the second highest turbulence intensity for both frequencies. Because of these occurrences there appears to be some combination of boundary conditions unaccounted for, the presence of circulation, and existing turbulence in the area beforehand and during the testing and data acquisition. This cannot be avoided in the 80x120 full-scale test section because the test section itself has ambient wind flow conditions on account of its size, and the inlet is open to the external environment, thus affecting every trial run. Future testing will need to further investigate these effects ahead of time (or accurately quantify them) to better understand their impact on such testing in the 80x120 test section.

Finally, future testing can improve the accuracy of the data acquired by accurately aligning the Cobra probe with the incoming air. The error in the conical section (±45 degrees) during recording could be reduced if the probe were aligned with the incident air stream rather than keeping it perpendicular to the face of the inlet. As the probe is located closer to either side of the 1/50th-scale inlet, air being pulled into the inlet creates a cascade effect that can be seen in Figure 22, and this change in incidence angle of wind can introduce significant error in the data collected near the sides and top edge of the inlet. To account for this variance in flow direction,

future research will need to incorporate additional sampling to measure the orientation of the incident airstream and orient the probe in this direction. This misalignment could be a potential cause for the higher turbulence intensities on the left half of the wind tunnel. It is currently unknown why the turbulence intensity is not symmetric over the inlet when no blockages are present. Future research investigations should use symmetric sampling locations as opposed to the asymmetric matrix used in this test campaign, shown in Figure 10.

FUTURE WORK

Additional model modifications are planned that will incorporate an accurate 1/50th-scale representation of the actual 80x120 inlet flow treatment (guide vanes, screens, and roof structural supports). These improvements to the 1/50th-scale model will allow for turbulence measurements in the model test section itself. This will remove the uncertainty with the alignment of the Cobra probe to incident flow angle.

Full-scale wind-on testing will allow for evaluation of external ambient wind effects due to existing and future blockages. This will include the effect of wind magnitude and direction.

Lastly, it is possible to conduct a smaller scale experiment in the future by testing the same quasi two-dimensional blockage configurations scaled down to fit inside of the 1/50th-scale NFAC, or even a smaller model of the 80x120 inlet/contraction/test section. Validating this experiment on a smaller scale will allow additional testing to be conducted without requiring use of the full-scale NFAC complex. If it is found that testing at a smaller scale is valid, additional testing campaigns will be carried out at this small scale to determine the influence of blockages on flow quality under both quiescent and atmospheric wind conditions under much more easily controlled ambient flow conditions about the wind tunnel model.

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2. Eckert, W. T. and Mort, K. W.: Wind vs. Wind Tunnel: The Aerodynamics of the Inlet for NASA's New, Very Large, Nonreturn-Flow Facility. Journal of Wind Engineering and Industrial Aerodynamics, Vol. 9, Issue 3, March 1982.
3. Schmidt, G.; Rossow, V.; van Aken, J.; and Parrish, C.: One-Fiftieth Scale Model Studies of 40- by 80-Foot and 80- by 120-Foot Wind Tunnel Complex at NASA Ames Research Center. NASA TM 89405, April 1987.
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6. Zell, P. T.: Performance and Test Section Flow Characteristics of the National Full-Scale Aerodynamics Complex 80- by 120-Foot Wind Tunnel. NASA TM 103920, Jan. 1993.
7. Gonzales, G.: Aerodynamics Flow Quality Testing in the 1/50th-Scale 80- by 120-Foot Wind Tunnel Model Test Section. Universities Space Research Association, Dec. 2014.
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TABLES

Table 1. Blower Calibration

Blower Frequency (Hz)	Velocity in Model Test Section (m/s)	Wind Speed in Model Test Section (knots)
13	12.7	24.7
24	24.9	48.4
36	36.0	70.0
48	47.5	92.3
50	49.2	95.6

FIGURES

Figure 1. Aerial photo of the NFAC.

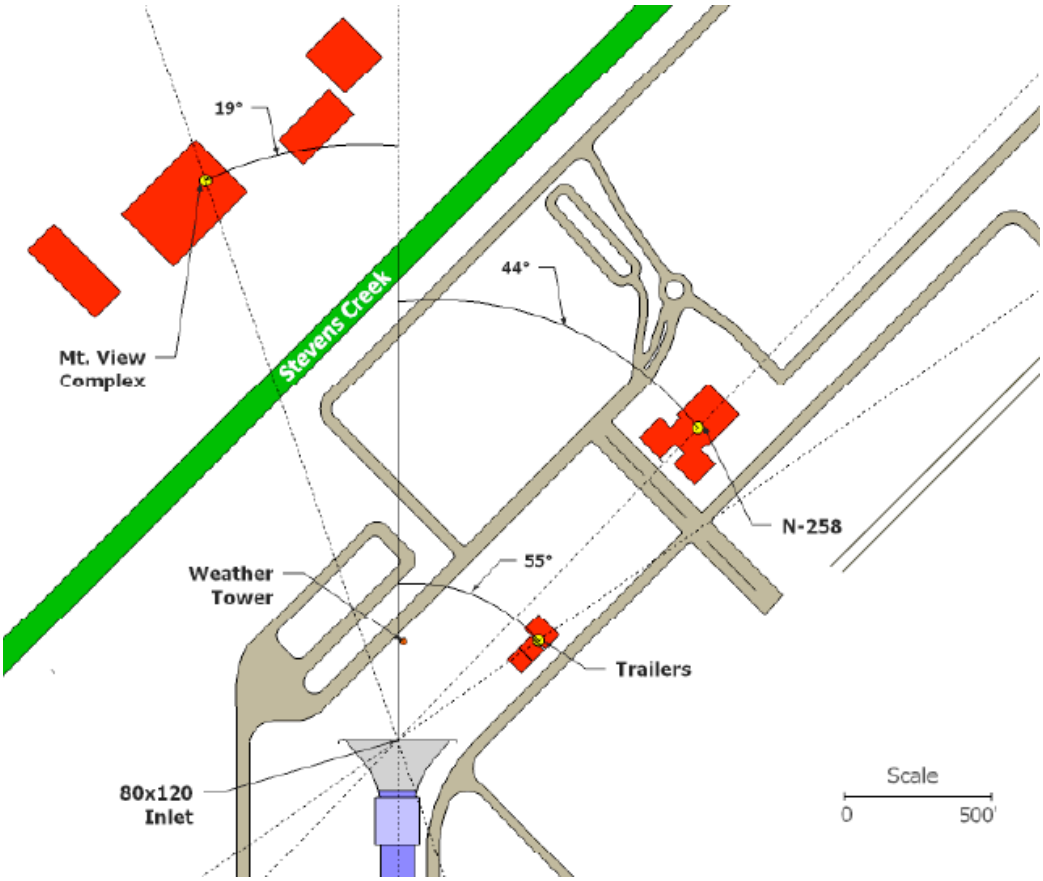


Figure 2. Plan view of the NFAC 80x120 inlet with existing buildings upstream.

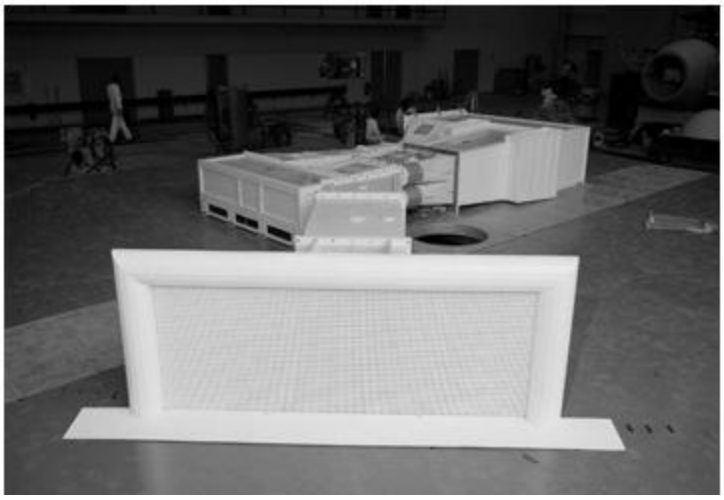


Figure 3. 1/50th-scale model of the NFAC as tested in 1976.

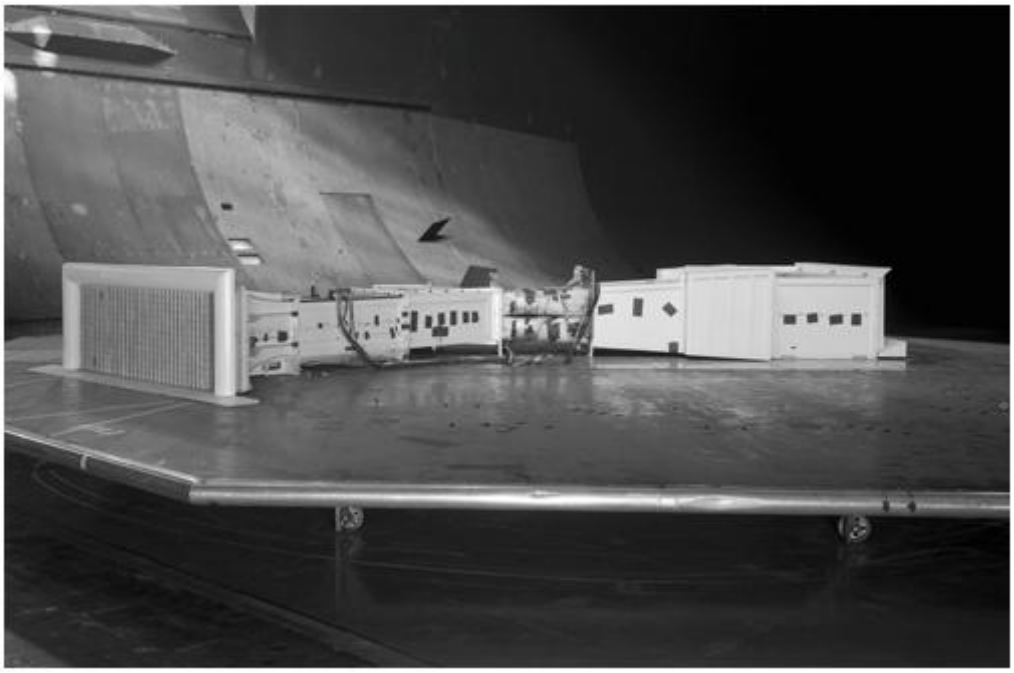


Figure 4. 1/50th-scale model of the NFAC in the 40- by 80-Foot Wind Tunnel for testing in 1976.

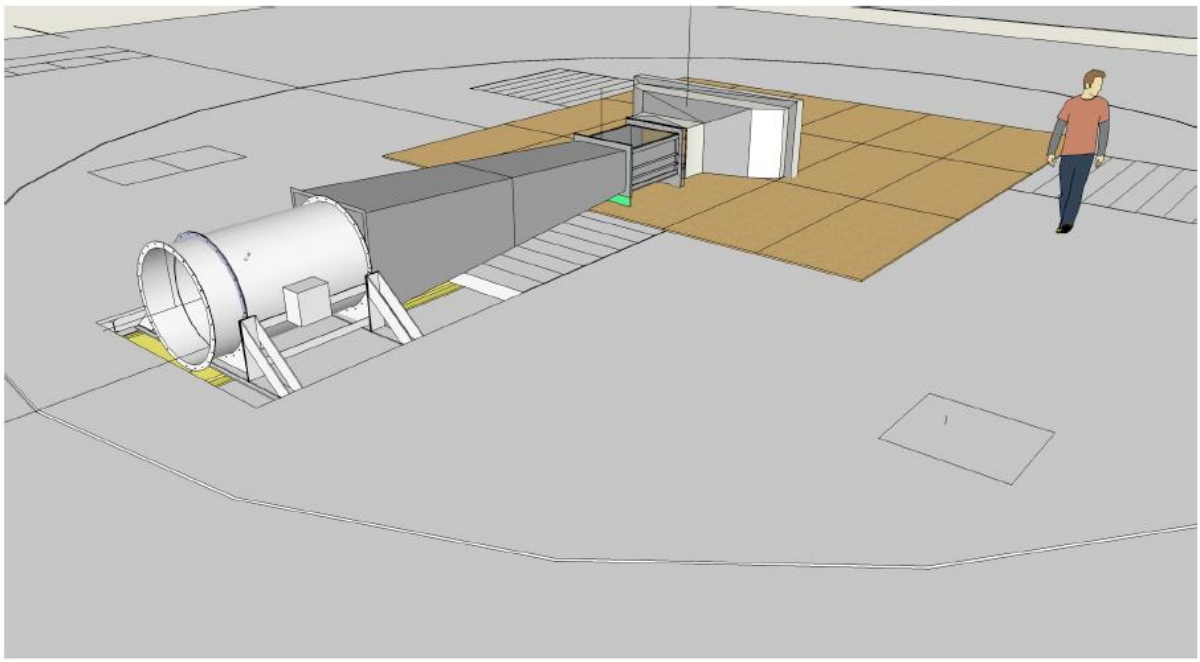


Figure 5. 1/50th-scale 80x120 leg installed inside the full-scale 80x120 test section.

Figure 6. Chicago Blower Co. D/47 vane axial fan attached to the rear of the 1/50th-scale model.

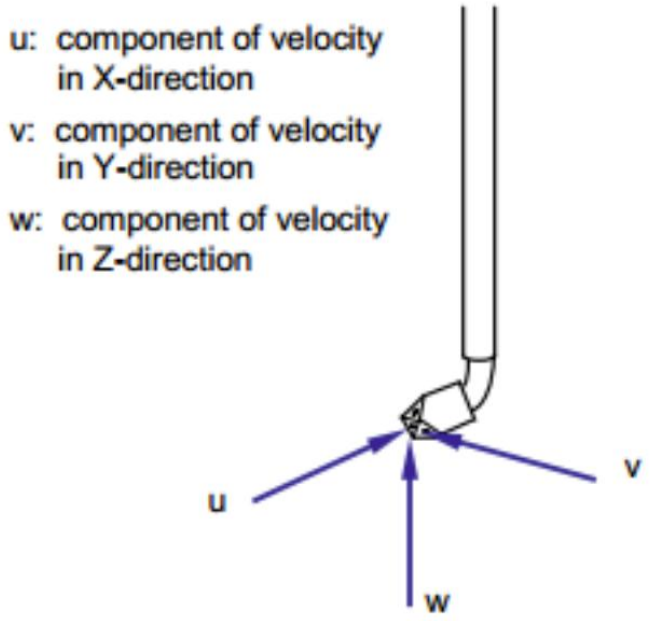


Figure 7. Cobra Probe velocity components.

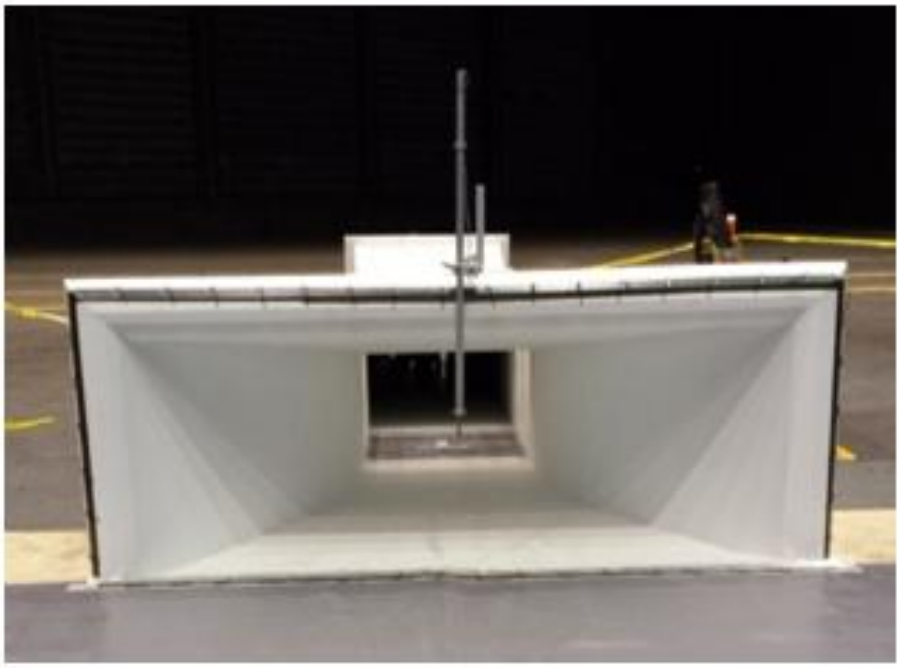


Figure 8. 1/50th-scale model of the 80x120 inlet with Cobra probe installed (no inlet treatment).

Figure 9. Cobra probe as mounted in the inlet.

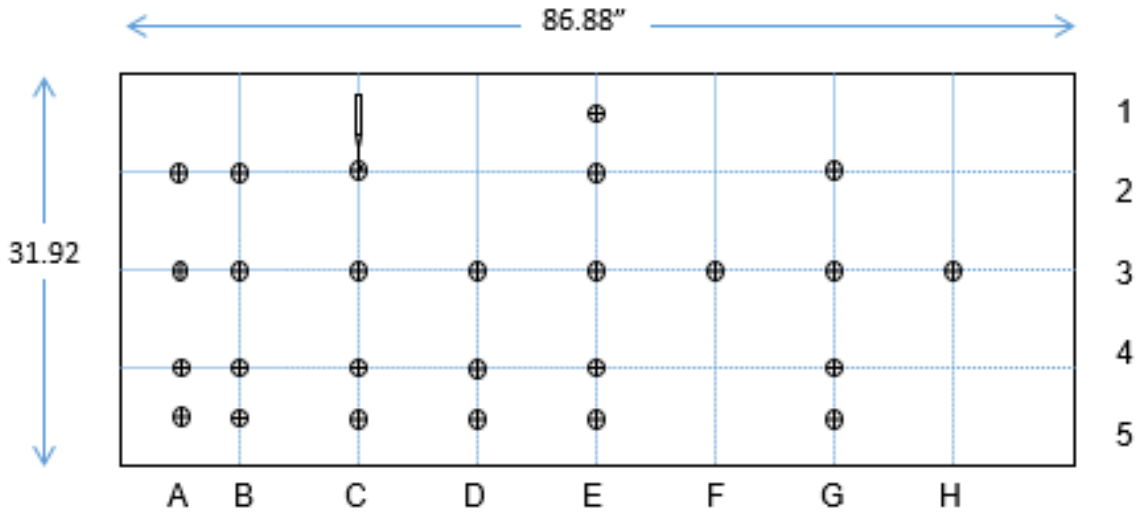


Figure 10. Cobra probe position matrix.

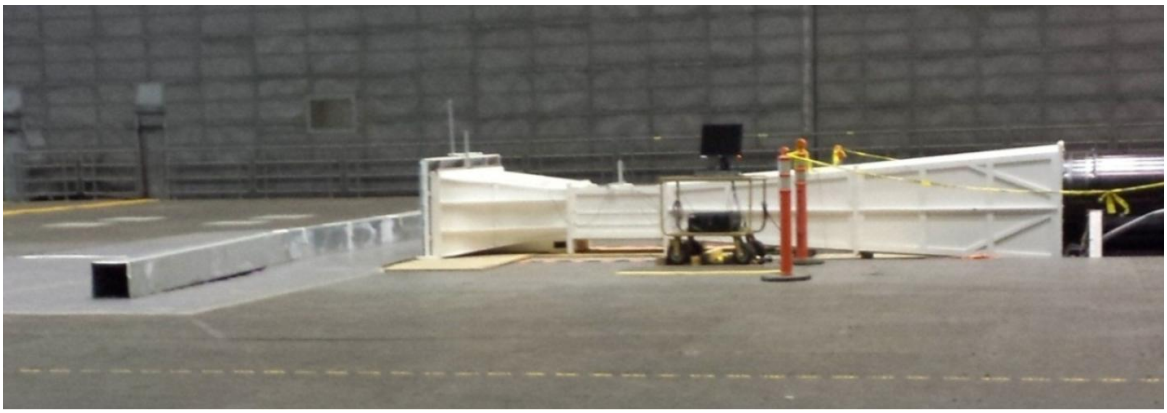


Figure 11. 1/50th-scale model of the 80x120 leg with blockage positioned 4 feet in front of inlet.

Figure 12. Placement of “Future Blockages” relative to the inlet.

Figure 13. Googleplex as seen in *Vanity Fair* magazine, February 2013.

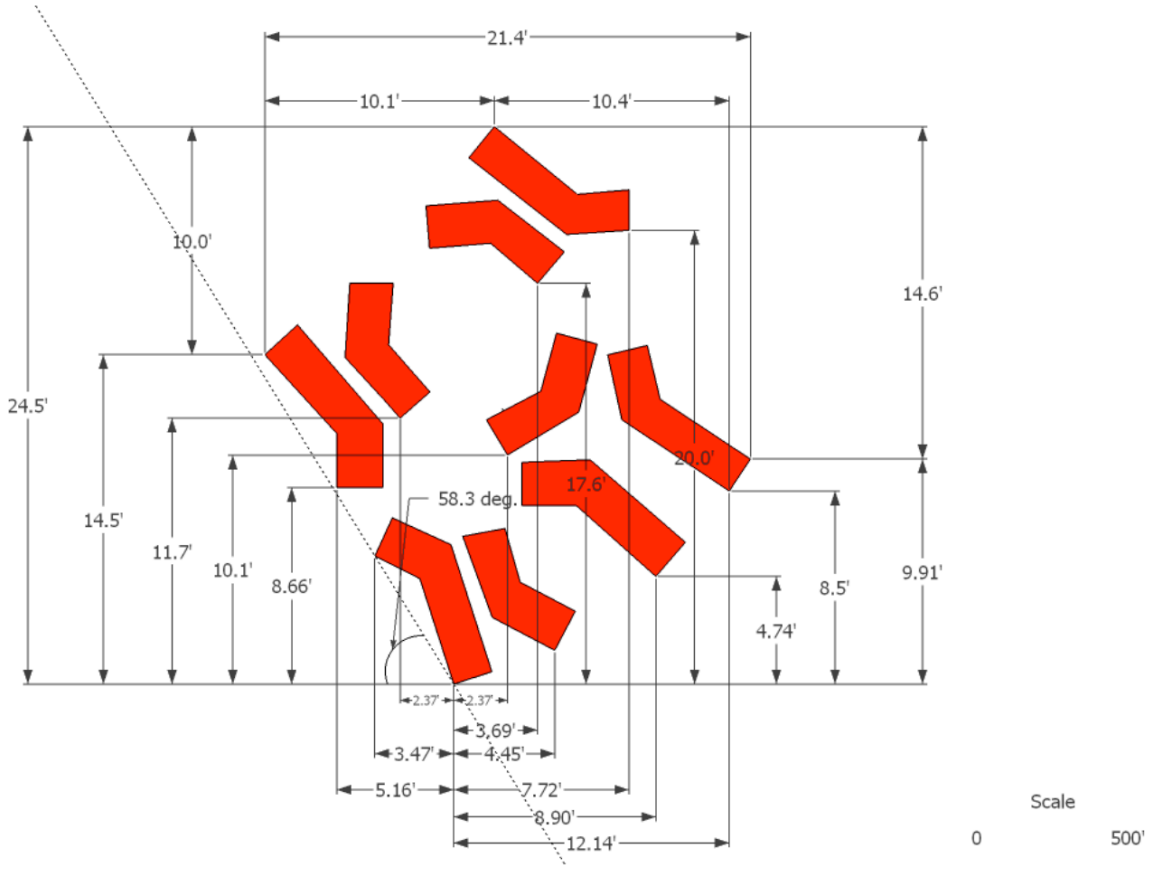


Figure 14. Googleplex dimensions and respective positions at 1/50th scale.

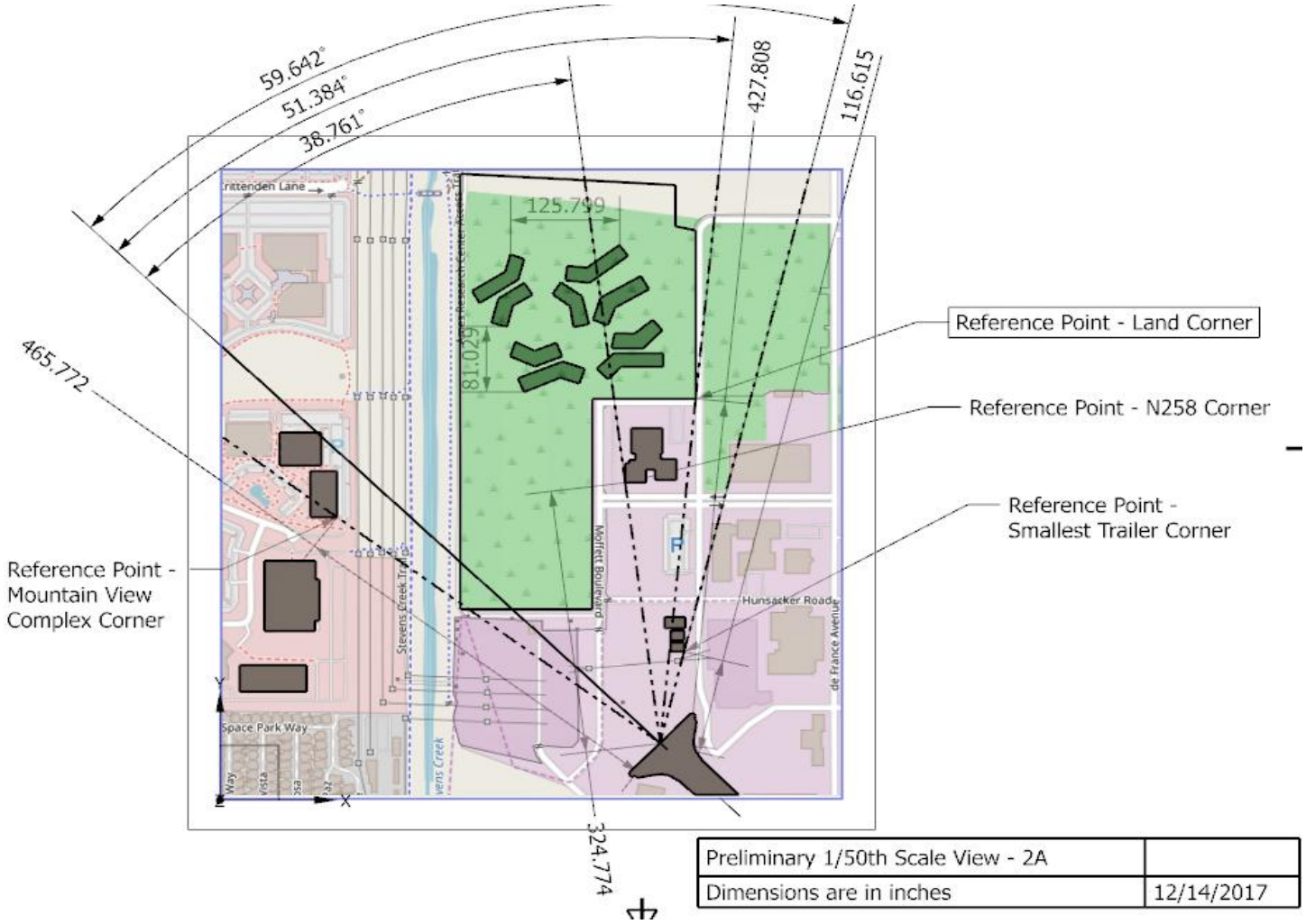


Figure 15. Building locations relative to the inlet at 1/50th scale.

Figure 16. Computer station located adjacent to the 1/50th-scale model.

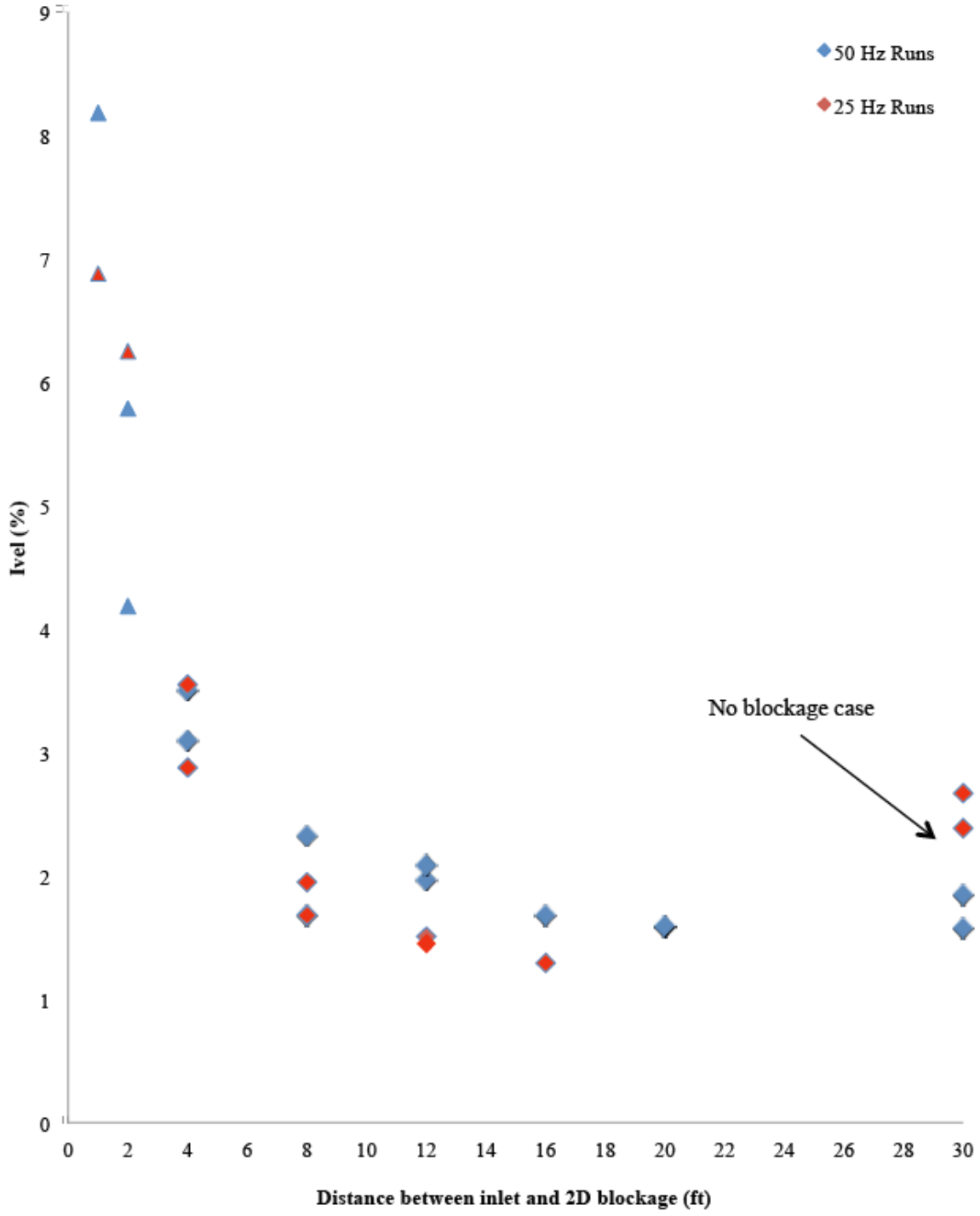


Figure17. Relative turbulence intensity measurements at inlet centerline (Ref. 4).

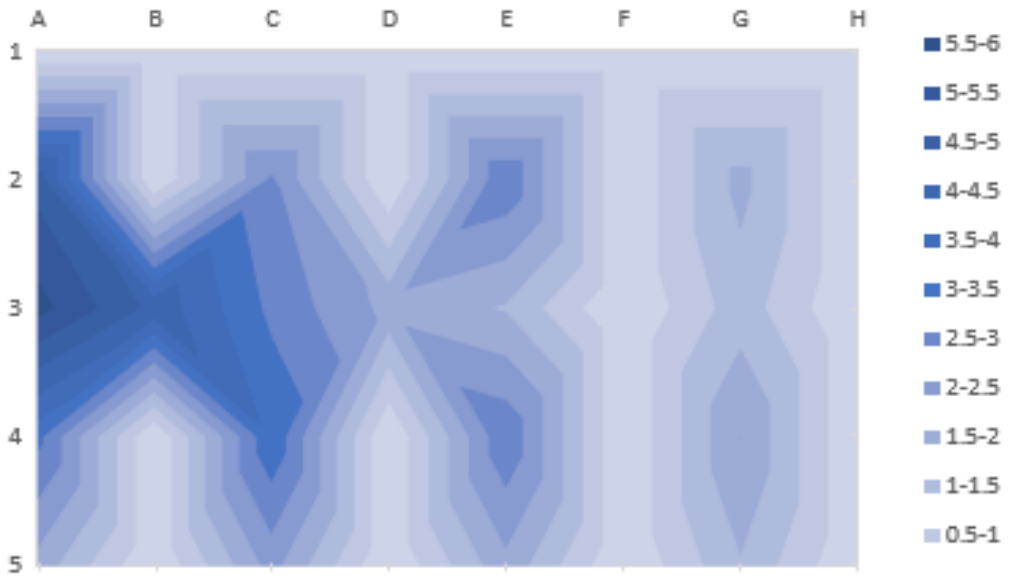


Figure 18. Turbulence intensity across inlet for “No Buildings.” Runs 207–227.

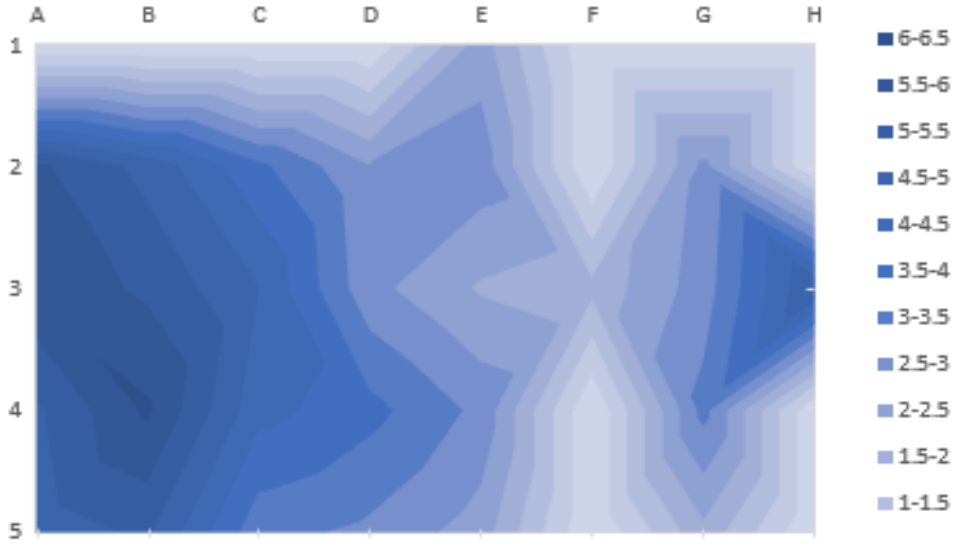


Figure 19. Turbulence intensity across inlet for “Existing Buildings.” Runs 111–167.

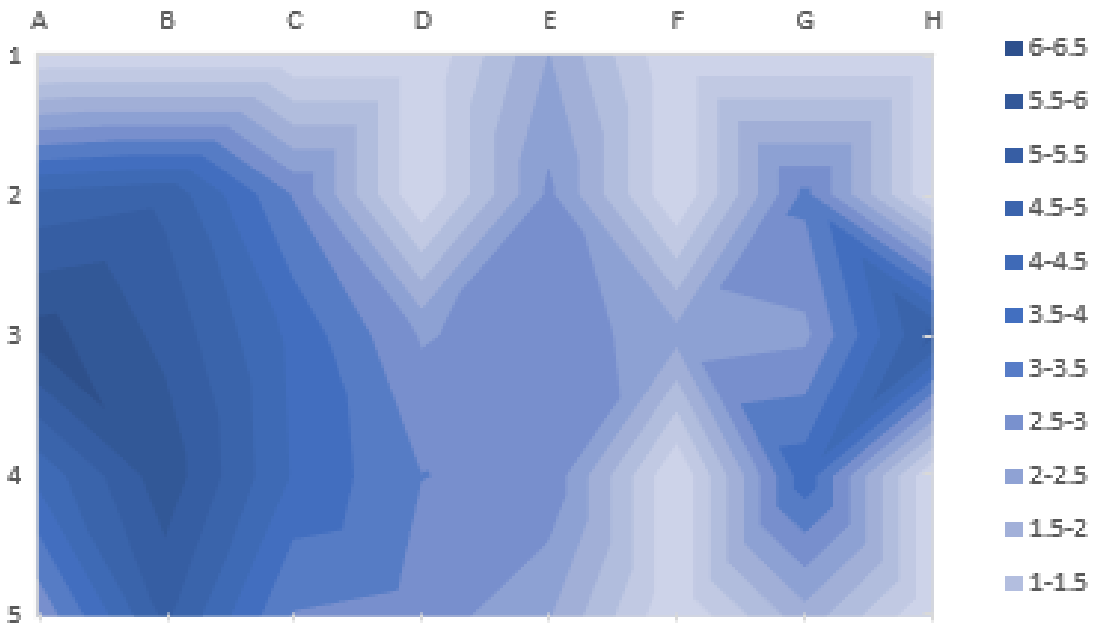


Figure 20. Turbulence intensity across inlet for “All Buildings.” Runs 44–110.

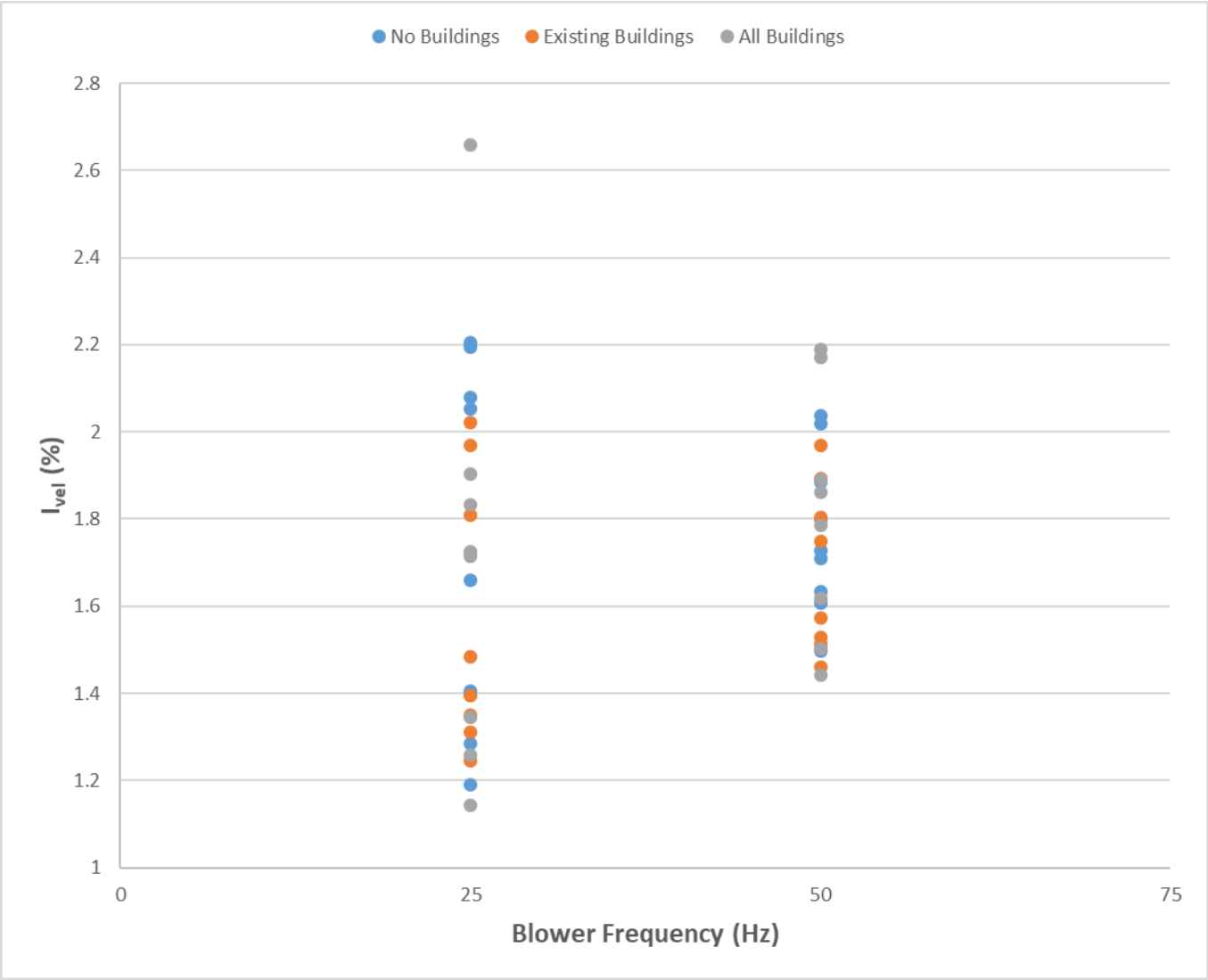


Figure 21. Turbulence intensity vs. blower frequency at the inlet for blockage configurations 1–3.

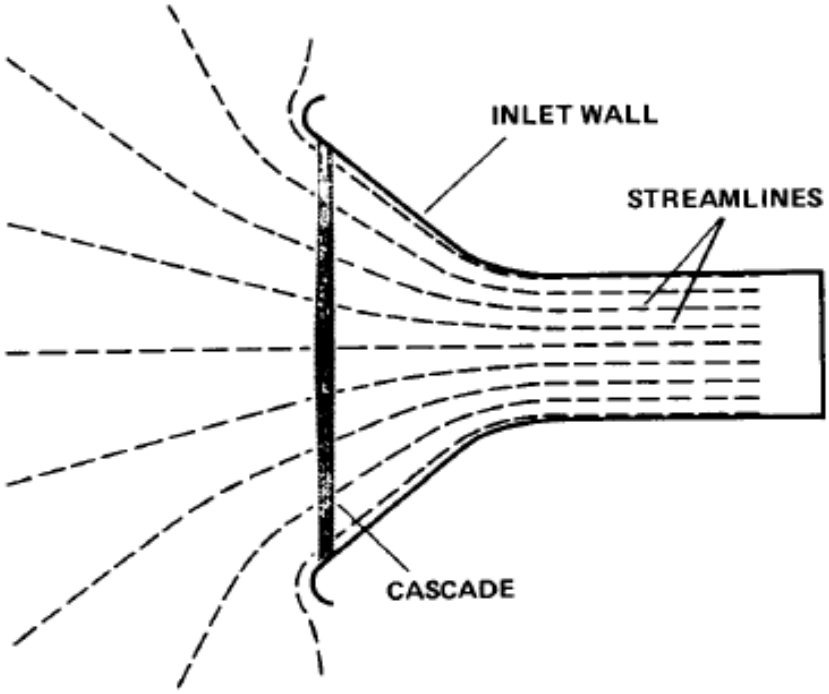


Figure 22. Plan view of inlet cascade used in computational analyses (Ref. 8).

APPENDIX A—INSTRUMENTATION SPECIFICATIONS

Specifications for Series 100 Cobra probe:

- Cobra probe length: approximately 160 mm.
- Cobra probe maximum diameter: 14 mm.
- Measures flow angles within ±45-degree cone.
- Velocity range: 2 to 100 m/s.
- Velocity resolution: 0.1 m/s in *u*, *v*, and *w* components.
- Velocity typically accurate to ±0.5 m/s.
- Pitch and yaw typically accurate to ±1.0 degree.
- Capable of measuring at frequencies higher than 2000 Hz.

APPENDIX B—RUN LOG AND DATA SUMMARY

Run	Date	Time	External Structures	Blower Frequency (Hz)	Probe Location	Mean (m/s)	St Dev (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
Run Information						Total Velocity Run Data		Averaged 10-Second Interval Data		
1	9-Aug-13	8:09	No Buildings	50	E3	11.145	0.310	11.145	0.237	2.152
2	9-Aug-13	8:27	No Buildings	0	E3	0.643	0.083	0.643	0.082	12.681
3	9-Aug-13	8:35	No Buildings	50	E3	11.006	0.164	11.006	0.160	1.463
4	9-Aug-13	8:41	No Buildings	50	E2	13.347	0.363	13.347	0.328	2.451
5	9-Aug-13	8:45	No Buildings	50	E4	10.664	0.391	10.664	0.310	2.966
6	9-Aug-13	8:47	No Buildings	50	E5	10.263	0.275	10.263	0.259	2.523
7	9-Aug-13	8:50	No Buildings	50	E3	11.267	0.407	11.267	0.290	2.484
8	9-Aug-13	8:53	No Buildings	50	A3	8.729	0.513	8.723	0.342	3.896
9	9-Aug-13	8:55	No Buildings	50	A4	8.497	0.600	8.504	0.336	4.030
10	9-Aug-13	8:56	No Buildings	50	A5	8.927	0.177	8.931	0.132	1.481
11	9-Aug-13	9:00	No Buildings	50	B5	8.311	0.431	8.311	0.369	4.425
12	9-Aug-13	9:01	No Buildings	50	B4	8.658	0.501	8.658	0.442	5.005
13	9-Aug-13	9:03	No Buildings	50	B3	9.497	0.567	9.496	0.459	4.824
14	9-Aug-13	9:06	No Buildings	50	C3	9.818	0.392	9.818	0.356	3.625
15	9-Aug-13	9:08	No Buildings	50	C4	9.302	0.386	9.302	0.344	3.679
16	9-Aug-13	9:10	No Buildings	50	C5	8.969	0.271	8.969	0.261	2.951
17	9-Aug-13	9:12	No Buildings	50	D5	9.853	0.362	9.853	0.316	3.295
18	9-Aug-13	9:14	No Buildings	50	D4	9.957	0.326	9.957	0.317	3.193
19	9-Aug-13	9:15	No Buildings	50	D3	10.605	0.256	10.605	0.229	2.169
20	9-Aug-13	9:18	No Buildings	50	F3	11.027	0.271	11.027	0.203	1.856
21	9-Aug-13	9:20	No Buildings	50	H3	10.374	0.580	10.372	0.512	4.929
22	9-Aug-13	9:22	No Buildings	50	G3	10.739	0.579	10.739	0.412	3.787
23	9-Aug-13	9:24	No Buildings	50	G5	9.987	0.418	9.987	0.299	3.020
24	9-Aug-13	9:26	No Buildings	50	G4	10.882	0.821	10.883	0.630	5.723
25	9-Aug-13	9:28	No Buildings	50	G2	11.345	0.486	11.345	0.431	3.797
26	9-Aug-13	9:31	No Buildings	50	D2	11.882	0.452	11.882	0.351	2.844
27	9-Aug-13	9:34	No Buildings	50	C2	10.830	0.439	10.830	0.364	3.406
28	9-Aug-13	9:36	No Buildings	50	B2	9.582	0.542	9.582	0.435	4.538

Run	Date	Time	External Structures	Blower Frequency (Hz)	Probe Location	Mean (m/s)	St Dev (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
Run Information						**Total Velocity Run Data**		**Averaged 10-Second Interval Data**		
29	9-Aug-13	9:38	No Buildings	50	A2	9.318	0.520	9.310	0.458	4.946
30	9-Aug-13	9:41	No Buildings	50	E3	11.155	0.272	11.155	0.245	2.191
31	9-Aug-13	9:47	No Buildings	0	E3	0.846	0.045	0.846	0.044	5.206
32	13-Aug-13	8:02	All Buildings	13	E3	3.135	0.078	3.135	0.059	1.887
33	13-Aug-13	8:05	All Buildings	20	E3	4.620	0.110	4.620	0.098	2.155
34	13-Aug-13	8:07	All Buildings	30	E3	6.814	0.080	6.814	0.079	1.169
35	13-Aug-13	8:11	All Buildings	40	E3	9.017	0.170	9.017	0.160	1.779
36	13-Aug-13	8:13	All Buildings	45	E3	10.086	0.230	10.086	0.195	1.960
37	13-Aug-13	8:18	All Buildings	50	E3	11.112	0.231	11.112	0.213	1.959
38	13-Aug-13	8:32	All Buildings	13	E3	3.075	0.052	3.075	0.036	1.173
39	13-Aug-13	8:35	All Buildings	20	E3	4.577	0.055	4.577	0.053	1.174
40	13-Aug-13	8:37	All Buildings	30	E3	6.849	0.146	6.849	0.103	1.536
41	13-Aug-13	8:39	All Buildings	40	E3	8.845	0.154	8.845	0.144	1.621
42	13-Aug-13	8:41	All Buildings	45	E3	9.986	0.194	9.986	0.171	1.720
44	13-Aug-13	9:19	All Buildings	50	E3	10.339	0.257	10.339	0.240	2.332
45	13-Aug-13	9:23	All Buildings	50	E5	2.739	1.029	2.738	1.026	37.482
46	13-Aug-13	9:28	All Buildings	50	N/A	0.790	0.119	0.789	0.067	8.232
47	13-Aug-13	9:40	All Buildings	50	E3	11.045	0.156	11.045	0.151	1.364
48	13-Aug-13	9:42	All Buildings	50	E5	10.107	0.226	10.107	0.222	2.175
49	13-Aug-13	9:44	All Buildings	50	E4	10.358	0.306	10.358	0.302	2.912
50	13-Aug-13	9:47	All Buildings	50	E1	13.372	0.321	13.372	0.270	2.018
51	13-Aug-13	9:49	All Buildings	50	E2	12.036	0.383	12.036	0.312	2.617
52	13-Aug-13	9:51	All Buildings	50	C2	10.640	0.388	10.640	0.316	2.960
53	13-Aug-13	9:53	All Buildings	50	C3	10.416	0.576	10.416	0.406	3.863
54	13-Aug-13	9:55	All Buildings	50	C4	9.434	0.412	9.434	0.373	3.949
55	13-Aug-13	9:57	All Buildings	50	C5	9.076	0.280	9.076	0.265	2.959
56	13-Aug-13	9:59	All Buildings	50	B5	8.396	0.573	8.398	0.432	5.103
57	13-Aug-13	10:02	All Buildings	50	B4	8.479	0.637	8.480	0.495	5.816
58	13-Aug-13	10:03	All Buildings	50	B3	8.989	0.578	9.002	0.483	5.370
59	13-Aug-13	10:07	All Buildings	50	B2	9.483	0.635	9.483	0.464	4.869
60	13-Aug-13	10:09	All Buildings	50	A2	9.450	0.652	9.448	0.441	4.624

Run	Date	Time	External Structures	Blower Frequency (Hz)	Probe Location	Mean (m/s)	St Dev (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
Run Information						Total Velocity Run Data		Averaged 10-Second Interval Data		
61	13-Aug-13	10:11	All Buildings	50	A4	8.106	0.372	8.106	0.334	4.119
62	13-Aug-13	10:13	All Buildings	50	A5	8.596	0.266	8.620	0.221	2.571
63	13-Aug-13	10:15	All Buildings	50	A3	9.336	0.754	9.330	0.578	6.208
64	13-Aug-13	10:17	All Buildings	50	E3	10.958	0.168	10.958	0.164	1.475
65	13-Aug-13	10:19	All Buildings	50	F3	10.791	0.362	10.791	0.236	2.188
66	13-Aug-13	10:21	All Buildings	50	H3	9.967	0.536	9.968	0.510	5.120
67	13-Aug-13	10:23	All Buildings	50	G3	10.277	0.286	10.277	0.246	2.376
68	13-Aug-13	10:25	All Buildings	50	G4	10.377	0.468	10.377	0.404	3.841
69	13-Aug-13	10:27	All Buildings	50	G5	9.713	0.199	9.713	0.173	1.789
70	13-Aug-13	10:28	All Buildings	50	G2	11.071	0.458	11.071	0.349	3.140
71	13-Aug-13	10:31	All Buildings	50	E3	10.972	0.192	10.972	0.179	1.634
72	13-Aug-13	10:33	All Buildings	50	E3	10.937	0.217	10.937	0.188	1.689
73	13-Aug-13	10:44	All Buildings	50	E3	10.984	0.162	10.984	0.160	1.455
74	13-Aug-13	10:46	All Buildings	50	E4	10.310	0.297	10.310	0.297	2.867
75	13-Aug-13	10:47	All Buildings	50	E5	10.091	0.194	10.091	0.194	1.921
76	13-Aug-13	10:49	All Buildings	50	D5	9.893	0.296	9.893	0.275	2.785
77	13-Aug-13	10:50	All Buildings	50	D4	10.087	0.312	10.087	0.307	3.009
78	13-Aug-13	10:52	All Buildings	50	D3	10.768	0.278	10.768	0.256	2.448
79	13-Aug-13	10:53	All Buildings	50	E3	3.570	3.557	3.542	0.318	9.763
80	14-Aug-13	7:34	All Buildings	25	E3	5.733	0.089	5.733	0.081	1.404
81	14-Aug-13	7:38	All Buildings	25	E1	6.889	0.084	6.889	0.079	1.143
82	14-Aug-13	7:40	All Buildings	25	E2	6.189	0.112	6.189	0.099	1.613
83	14-Aug-13	7:42	All Buildings	25	E4	5.580	0.182	5.580	0.160	2.876
84	14-Aug-13	7:44	All Buildings	25	E5	5.430	0.140	5.430	0.114	2.091
85	14-Aug-13	7:46	All Buildings	25	D5	5.162	0.104	5.162	0.096	1.878
86	14-Aug-13	7:48	All Buildings	25	D4	5.244	0.154	5.244	0.148	2.827
87	14-Aug-13	7:49	All Buildings	25	D3	5.882	0.229	5.882	0.147	2.510
88	14-Aug-13	7:51	All Buildings	25	D2	6.045	0.229	6.045	0.171	2.802
89	14-Aug-13	7:53	All Buildings	25	C2	5.652	0.118	5.652	0.104	1.819
90	14-Aug-13	7:55	All Buildings	25	C3	4.995	0.104	4.995	0.095	1.935
91	14-Aug-13	7:57	All Buildings	25	C4	4.859	0.149	4.859	0.146	3.009

Run	Date	Time	External Structures	Blower Frequency (Hz)	Probe Location	Mean (m/s)	St Dev (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
Run Information						**Total Velocity Run Data**		**Averaged 10-Second Interval Data**		
92	14-Aug-13	7:58	All Buildings	25	C5	4.730	0.078	4.730	0.074	1.540
93	14-Aug-13	8:00	All Buildings	25	B5	4.201	0.088	4.201	0.082	1.963
94	14-Aug-13	8:02	All Buildings	25	B4	4.299	0.180	4.299	0.171	4.071
95	14-Aug-13	8:03	All Buildings	25	B3	4.740	0.146	4.740	0.121	2.593
96	14-Aug-13	8:05	All Buildings	25	B2	4.798	0.153	4.798	0.119	2.485
97	14-Aug-13	8:07	All Buildings	25	A2	4.782	0.279	4.776	0.178	3.763
98	14-Aug-13	8:08	All Buildings	25	A3	4.446	0.239	4.448	0.231	5.169
99	14-Aug-13	8:12	All Buildings	25	A4	4.121	0.115	4.121	0.099	2.408
100	14-Aug-13	8:13	All Buildings	25	A5	4.034	0.085	4.034	0.079	1.966
101	14-Aug-13	8:15	All Buildings	25	G5	4.918	0.068	4.918	0.065	1.333
102	14-Aug-13	8:17	All Buildings	25	G4	5.083	0.177	5.083	0.134	2.643
103	14-Aug-13	8:19	All Buildings	25	G2	5.759	0.271	5.759	0.197	3.400
104	14-Aug-13	8:20	All Buildings	25	G3	5.503	0.195	5.503	0.125	2.137
105	14-Aug-13	8:22	All Buildings	25	H3	5.548	0.205	5.547	0.187	3.372
106	14-Aug-13	8:24	All Buildings	25	F3	5.556	0.079	5.556	0.075	1.316
107	14-Aug-13	8:26	All Buildings	25	E3	5.856	0.103	5.856	0.084	1.449
108	14-Aug-13	8:28	All Buildings	42	E3	9.460	0.138	9.460	0.127	1.353
109	14-Aug-13	8:32	All Buildings	42	E3	3.822	2.596	3.818	0.299	8.069
110	14-Aug-13	8:54	All Buildings	50	E3	11.044	0.199	11.044	0.179	1.630
111	14-Aug-13	8:57	Existing Buildings	50	E1	13.272	0.331	13.272	0.287	2.236
112	14-Aug-13	8:58	Existing Buildings	50	E2	12.174	0.367	12.174	0.349	2.824
113	14-Aug-13	9:00	Existing Buildings	50	E4	10.460	0.305	10.460	0.298	2.838
115	14-Aug-13	9:01	Existing Buildings	50	E5	10.330	0.267	10.330	0.250	2.450
116	14-Aug-13	9:04	Existing Buildings	50	D5	10.104	0.305	10.104	0.287	2.884
117	14-Aug-13	9:06	Existing Buildings	50	D4	10.189	0.390	10.189	0.373	3.667
118	14-Aug-13	9:07	Existing Buildings	50	D3	10.825	0.330	10.825	0.285	2.657
119	14-Aug-13	9:09	Existing Buildings	50	D2	11.710	0.366	11.710	0.298	2.520
120	14-Aug-13	9:11	Existing Buildings	50	C2	10.470	0.332	10.470	0.313	2.983
121	14-Aug-13	9:13	Existing Buildings	50	C3	10.371	0.628	10.371	0.540	5.178
122	14-Aug-13	9:14	Existing Buildings	50	C4	9.364	0.446	9.364	0.418	4.322
123	14-Aug-13	9:16	Existing Buildings	50	C5	9.174	0.333	9.178	0.287	3.115

Run	Date	Time	External Structures	Blower Frequency (Hz)	Probe Location	Mean (m/s)	St Dev (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
Run Information						**Total Velocity Run Data**		**Averaged 10-Second Interval Data**		
124	14-Aug-13	9:18	Existing Buildings	50	B5	8.515	0.488	8.515	0.435	5.088
125	14-Aug-13	9:20	Existing Buildings	50	B4	8.659	0.627	8.674	0.529	6.080
126	14-Aug-13	9:22	Existing Buildings	50	B3	8.913	0.554	8.912	0.482	5.402
127	14-Aug-13	9:24	Existing Buildings	50	B2	9.317	0.576	9.313	0.452	4.828
128	14-Aug-13	9:25	Existing Buildings	50	A2	8.530	0.509	8.530	0.410	4.824
129	14-Aug-13	9:27	Existing Buildings	50	A3	8.604	0.584	8.606	0.471	5.443
130	14-Aug-13	9:29	Existing Buildings	50	A4	8.006	0.376	8.024	0.317	3.926
131	14-Aug-13	9:30	Existing Buildings	50	A5	8.234	0.454	8.239	0.391	4.732
132	14-Aug-13	9:33	Existing Buildings	50	E3	11.140	0.324	11.140	0.260	2.395
133	14-Aug-13	9:35	Existing Buildings	50	H3	9.981	0.567	9.971	0.498	5.001
134	14-Aug-13	9:38	Existing Buildings	50	G3	10.492	0.499	10.492	0.301	2.844
135	14-Aug-13	9:39	Existing Buildings	50	G4	9.784	0.423	9.784	0.239	2.350
136	14-Aug-13	9:41	Existing Buildings	50	G5	9.430	0.194	9.430	0.153	1.651
137	14-Aug-13	9:43	Existing Buildings	50	G2	10.837	0.446	10.837	0.281	2.509
138	14-Aug-13	9:45	Existing Buildings	50	F3	11.036	0.195	11.036	0.179	1.647
139	14-Aug-13	9:49	Existing Buildings	50	E3	11.092	0.207	11.092	0.185	1.675
140	14-Aug-13	10:26	Existing Buildings	40	E3	3.411	2.724	3.075	0.279	10.515
141	19-Aug-13	8:11	Existing Buildings	50	E3	10.904	0.154	10.904	0.149	1.362
142	19-Aug-13	8:16	Existing Buildings	50	E3	10.883	0.173	10.883	0.160	1.469
143	19-Aug-13	8:21	Existing Buildings	50	E3	11.064	0.200	11.064	0.173	1.564
144	19-Aug-13	8:27	Existing Buildings	50	E3	10.996	0.176	10.996	0.173	1.575
145	19-Aug-13	8:34	Existing Buildings	50	E3	10.974	0.173	10.974	0.168	1.534
146	19-Aug-13	8:37	Existing Buildings	50	E3	11.116	0.211	11.116	0.197	1.768
147	19-Aug-13	8:41	Existing Buildings	50	E3	11.029	0.179	11.029	0.174	1.574
148	19-Aug-13	8:44	Existing Buildings	50	E3	11.038	0.190	11.038	0.185	1.677
149	19-Aug-13	9:17	Existing Buildings	50	E3	10.910	0.162	10.910	0.152	1.391
150	19-Aug-13	9:19	Existing Buildings	50	E2	12.095	0.370	12.095	0.345	2.777
151	19-Aug-13	9:22	Existing Buildings	50	E4	10.496	0.323	10.496	0.305	2.904
152	19-Aug-13	9:24	Existing Buildings	50	E5	10.200	0.219	10.200	0.212	2.074
153	19-Aug-13	9:28	Existing Buildings	50	C5	9.114	0.310	9.114	0.295	3.233
154	19-Aug-13	9:31	Existing Buildings	50	C4	9.095	0.378	9.095	0.367	4.034

Run	Date	Time	External Structures	Blower Frequency (Hz)	Probe Location	Mean (m/s)	St Dev (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
Run Information						Total Velocity Run Data		Averaged 10-Second Interval Data		
155	19-Aug-13	9:33	Existing Buildings	50	C2	10.774	0.545	10.775	0.450	4.264
156	19-Aug-13	9:36	Existing Buildings	50	C3	10.010	0.530	10.010	0.386	3.848
157	19-Aug-13	9:39	Existing Buildings	50	E3	11.805	0.934	11.805	0.612	5.390
158	19-Aug-13	9:42	Existing Buildings	50	E3	11.161	0.279	11.161	0.226	2.123
159	19-Aug-13	9:45	Existing Buildings	50	A3	7.950	0.696	7.957	0.519	6.335
160	19-Aug-13	9:48	Existing Buildings	50	A2	8.587	0.628	8.588	0.568	6.377
161	19-Aug-13	9:51	Existing Buildings	50	A4	8.434	0.582	8.435	0.493	5.879
162	19-Aug-13	9:54	Existing Buildings	50	A5	8.246	0.539	8.277	0.385	4.663
163	19-Aug-13	9:58	Existing Buildings	50	G5	9.751	0.259	9.751	0.203	2.080
164	19-Aug-13	10:00	Existing Buildings	50	G4	10.343	0.556	10.343	0.430	3.993
165	19-Aug-13	10:03	Existing Buildings	50	G2	10.747	0.384	10.747	0.297	2.743
166	19-Aug-13	10:06	Existing Buildings	50	G3	10.425	0.375	10.425	0.278	2.663
167	19-Aug-13	10:09	Existing Buildings	50	E3	10.954	0.199	10.954	0.177	1.615
207	23-Aug-13	7:44	No Buildings	50	A5	8.865	0.190	8.869	0.153	1.728
208	23-Aug-13	7:47	No Buildings	50	E3	11.087	0.172	11.087	0.158	1.432
209	23-Aug-13	7:50	No Buildings	50	E2	12.261	0.386	12.261	0.356	2.924
210	23-Aug-13	7:52	No Buildings	50	E4	10.579	0.310	10.579	0.309	2.920
211	23-Aug-13	7:54	No Buildings	50	E5	10.492	0.196	10.492	0.195	1.857
212	23-Aug-13	7:56	No Buildings	50	C5	9.703	0.302	9.703	0.216	2.191
213	23-Aug-13	7:58	No Buildings	50	C4	9.526	0.333	9.526	0.324	3.429
214	23-Aug-13	8:00	No Buildings	50	C3	10.314	0.420	10.314	0.299	2.881
215	23-Aug-13	8:02	No Buildings	50	C2	10.841	0.309	10.841	0.277	2.557
216	23-Aug-13	8:05	No Buildings	50	E3	11.053	0.169	11.053	0.165	1.495
217	23-Aug-13	8:07	No Buildings	50	D3	10.824	0.211	10.824	0.201	1.851
218	23-Aug-13	8:09	No Buildings	50	B3	8.931	0.428	8.931	0.388	4.345
219	23-Aug-13	8:11	No Buildings	50	A3	9.108	0.654	9.108	0.520	5.701
220	23-Aug-13	8:13	No Buildings	50	A4	8.556	0.413	8.558	0.273	3.167
221	23-Aug-13	8:16	No Buildings	50	A5	8.790	0.237	8.792	0.169	1.922
222	23-Aug-13	8:19	No Buildings	50	A2	8.990	0.460	8.990	0.432	4.808
223	23-Aug-13	8:22	No Buildings	50	G2	10.706	0.211	10.706	0.173	1.654
224	23-Aug-13	8:25	No Buildings	50	G5	9.765	0.199	9.765	0.145	1.454

Run	Date	Time	External Structures	Blower Frequency (Hz)	Probe Location	Mean (m/s)	St Dev (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
Run Information						**Total Velocity Run Data**		**Averaged 10-Second Interval Data**		
225	23-Aug-13	8:27	No Buildings	50	G4	9.876	0.236	9.876	0.201	2.006
226	23-Aug-13	8:29	No Buildings	50	G3	10.179	0.159	10.179	0.129	1.270
227	23-Aug-13	8:30	No Buildings	50	E3	11.108	0.168	11.108	0.159	1.431
228	23-Aug-13	8:44	No Buildings	25	E3	5.707	0.067	5.707	0.063	1.090
229	23-Aug-13	8:46	No Buildings	25	E4	25.748	0.355	25.748	0.338	1.319
230	23-Aug-13	8:48	No Buildings	25	E4	5.346	0.066	5.346	0.066	1.205
231	23-Aug-13	8:50	No Buildings	25	E2	6.179	0.110	6.179	0.096	1.566
232	23-Aug-13	8:54	No Buildings	25	A2	4.867	0.220	4.867	0.145	2.991
233	23-Aug-13	8:55	No Buildings	25	A3	4.745	0.347	4.745	0.187	3.894
234	23-Aug-13	8:58	No Buildings	25	A4	5.005	0.350	4.997	0.253	5.035
235	23-Aug-13	9:00	No Buildings	25	A5	4.470	0.146	4.503	0.047	1.042
236	23-Aug-13	9:02	No Buildings	25	E3	5.671	0.061	5.671	0.057	0.998
237	23-Aug-13	9:05	No Buildings	25	C3	5.130	0.104	5.130	0.082	1.590
238	23-Aug-13	9:06	No Buildings	25	C4	4.718	0.191	4.718	0.190	4.004
239	23-Aug-13	9:08	No Buildings	25	C5	4.778	0.073	4.778	0.073	1.523
240	23-Aug-13	9:11	No Buildings	25	C2	5.447	0.120	5.447	0.111	2.009
241	23-Aug-13	9:14	No Buildings	25	G2	5.913	0.299	5.922	0.196	3.278
242	23-Aug-13	9:15	No Buildings	25	G4	4.732	0.144	4.732	0.141	2.991
243	23-Aug-13	9:17	No Buildings	25	G5	4.701	0.069	4.701	0.066	1.399
244	23-Aug-13	9:19	No Buildings	25	G3	5.263	0.109	5.263	0.072	1.391
245	23-Aug-13	9:21	No Buildings	25	E3	5.660	0.062	5.660	0.060	1.052
246	23-Aug-13	9:52	2D at 1'	50	E3	11.842	0.887	11.842	0.847	7.167
247	23-Aug-13	9:54	2D at 1'	50	E2	13.320	0.281	13.320	0.262	1.922
248	23-Aug-13	9:55	2D at 1'	50	E4	14.971	2.862	14.966	2.847	19.032
249	23-Aug-13	9:57	2D at 1'	50	E5	10.494	4.048	10.630	3.708	35.312
250	23-Aug-13	9:58	2D at 1'	50	A5	10.425	0.488	10.382	0.454	4.377
251	23-Aug-13	10:00	2D at 1'	50	A4	10.425	0.678	10.337	0.554	5.339
252	23-Aug-13	10:02	2D at 1'	50	A2	9.984	0.651	9.983	0.567	5.638
253	23-Aug-13	10:03	2D at 1'	50	A3	10.371	0.745	10.198	0.684	6.648
254	23-Aug-13	10:05	2D at 1'	50	C3	11.359	0.542	11.359	0.396	3.515
255	23-Aug-13	10:13	2D at 2'	50	C3	10.473	0.298	10.473	0.260	2.492

Run	Date	Time	External Structures	Blower Frequency (Hz)	Probe Location	Mean (m/s)	St Dev (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
Run Information						Total Velocity Run Data		Averaged 10-Second Interval Data		
256	23-Aug-13	10:15	2D at 2'	50	A3	10.159	0.516	10.158	0.479	4.724
257	23-Aug-13	10:17	2D at 2'	50	A2	9.180	0.631	9.148	0.466	5.035
258	23-Aug-13	10:18	2D at 2'	50	A4	8.310	0.483	8.312	0.369	4.402
259	23-Aug-13	10:20	2D at 2'	50	A5	8.308	0.532	8.337	0.424	5.060
260	23-Aug-13	10:21	2D at 2'	50	E5	10.384	1.646	10.367	1.534	14.775
261	23-Aug-13	10:23	2D at 2'	50	E4	12.054	1.717	12.052	1.632	13.574
262	23-Aug-13	10:24	2D at 2'	50	E3	11.138	0.774	11.138	0.725	6.518
263	23-Aug-13	10:26	2D at 2'	50	E2	12.424	0.375	12.424	0.357	2.865
264	23-Aug-13	10:30	2D at 4'	50	E2	12.484	0.216	12.484	0.206	1.594
265	23-Aug-13	10:31	2D at 4'	50	E3	10.921	0.207	10.921	0.203	1.887
266	23-Aug-13	10:33	2D at 4'	50	E4	10.743	0.726	10.743	0.716	6.637
267	23-Aug-13	10:34	2D at 4'	50	E5	10.182	0.490	10.182	0.480	4.681
268	23-Aug-13	10:39	2D at 8'	50	E5	10.227	0.272	10.227	0.265	2.620
269	23-Aug-13	10:41	2D at 8'	50	E4	10.465	0.399	10.465	0.350	3.409
270	23-Aug-13	10:42	2D at 8'	50	E3	11.032	0.259	11.032	0.228	1.956
271	23-Aug-13	10:44	2D at 8'	50	E2	12.280	0.375	12.280	0.325	2.656
272	28-Aug-13	11:15	All Buildings	40	A5	7.172	0.329	7.172	0.218	3.045
273	28-Aug-13	11:24	All Buildings	40	A5	7.425	0.234	7.425	0.179	2.404
274	29-Aug-13	6:41	All Buildings	40	E3	10.383	0.384	10.383	0.361	3.441
275	29-Aug-13	7:41	All Buildings	40	E3	10.319	0.339	10.319	0.308	2.941
276	29-Aug-13	7:58	All Buildings	40	E3	10.350	0.915	10.350	0.908	8.855
277	10-Sep-13	7:45	All Buildings	25	E3	5.620	0.078	5.620	0.076	1.346
278	10-Sep-13	7:49	All Buildings	50	E3	10.803	0.177	10.803	0.175	1.617
279	10-Sep-13	8:12	Existing Buildings	25	E3	5.585	0.076	5.585	0.075	1.351
280	10-Sep-13	8:18	Existing Buildings	50	E3	10.835	0.175	10.835	0.166	1.529
281	10-Sep-13	8:29	No Buildings	25	E3	5.522	0.080	5.522	0.078	1.405
282	10-Sep-13	8:33	No Buildings	50	E3	10.820	0.191	10.820	0.177	1.633
283	10-Sep-13	8:38	No Buildings	25	E3	5.629	0.155	5.629	0.124	2.195
284	10-Sep-13	8:43	No Buildings	50	E3	10.837	0.178	10.837	0.174	1.607
285	10-Sep-13	8:55	Existing Buildings	25	E3	5.643	0.075	5.643	0.074	1.310
286	10-Sep-13	8:59	Existing Buildings	50	E3	10.913	0.174	10.913	0.172	1.573

Run	Date	Time	External Structures	Blower Frequency (Hz)	Probe Location	Mean (m/s)	St Dev (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
Run Information						Total Velocity Run Data		Averaged 10-Second Interval Data		
287	10-Sep-13	9:14	All Buildings	25	E3	5.655	0.068	5.655	0.065	1.142
288	10-Sep-13	9:17	All Buildings	50	E3	10.844	0.171	10.844	0.163	1.501
289	10-Sep-13	9:21	All Buildings	25	E3	5.822	0.259	5.822	0.156	2.659
290	10-Sep-13	9:25	All Buildings	50	E3	10.959	0.205	10.959	0.196	1.786
291	10-Sep-13	9:36	Existing Buildings	25	E3	5.677	0.088	5.677	0.079	1.394
292	10-Sep-13	9:39	Existing Buildings	50	E3	10.854	0.168	10.854	0.164	1.513
293	10-Sep-13	9:49	No Buildings	25	E3	5.686	0.085	5.686	0.079	1.397
294	10-Sep-13	9:53	No Buildings	50	E3	10.895	0.166	10.895	0.163	1.498
295	10-Sep-13	9:57	No Buildings	25	E3	5.607	0.069	5.607	0.067	1.190
296	10-Sep-13	10:01	No Buildings	50	E3	10.962	0.249	10.962	0.197	1.798
297	10-Sep-13	10:04	No Buildings	25	E3	5.733	0.151	5.733	0.118	2.054
298	10-Sep-13	10:08	No Buildings	50	E3	11.110	0.260	11.109	0.209	1.884
299	10-Sep-13	10:17	Existing Buildings	25	E3	5.734	0.157	5.734	0.116	2.020
300	10-Sep-13	10:20	Existing Buildings	50	E3	11.109	0.250	11.109	0.210	1.892
301	10-Sep-13	10:34	All Buildings	25	E3	5.660	0.107	5.660	0.104	1.833
302	10-Sep-13	10:38	All Buildings	50	E3	10.981	0.268	10.981	0.239	2.172
303	11-Sep-13	7:22	All Buildings	25	E3	5.681	0.075	5.681	0.072	1.259
304	11-Sep-13	7:27	All Buildings	50	E3	10.886	0.160	10.886	0.157	1.443
305	11-Sep-13	7:39	Existing Buildings	50	E3	10.928	0.164	10.928	0.159	1.459
306	11-Sep-13	7:46	Existing Buildings	25	E3	5.604	0.070	5.604	0.070	1.245
307	11-Sep-13	7:57	No Buildings	25	E3	5.607	0.075	5.607	0.072	1.284
308	11-Sep-13	8:02	No Buildings	50	E3	10.940	0.194	10.940	0.187	1.709
309	11-Sep-13	8:08	No Buildings	25	E3	5.744	0.152	5.744	0.127	2.206
310	11-Sep-13	8:13	No Buildings	50	E3	11.036	0.270	11.036	0.225	2.036
311	11-Sep-13	8:25	Existing Buildings	50	E3	10.906	0.201	10.906	0.191	1.748
312	11-Sep-13	8:32	Existing Buildings	25	E3	5.592	0.126	5.592	0.110	1.969
313	11-Sep-13	8:50	All Buildings	25	E3	5.665	0.119	5.665	0.108	1.903
314	11-Sep-13	8:55	All Buildings	50	E3	11.035	0.260	11.035	0.242	2.190
315	11-Sep-13	9:00	All Buildings	50	E3	10.993	0.235	10.993	0.208	1.891
316	11-Sep-13	9:07	All Buildings	25	E3	5.628	0.104	5.628	0.097	1.715
317	11-Sep-13	9:19	Existing Buildings	25	E3	5.707	0.112	5.707	0.103	1.809

Run	Date	Time	External Structures	Blower Frequency (Hz)	Probe Location	Mean (m/s)	St Dev (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
Run Information						**Total Velocity Run Data**		**Averaged 10-Second Interval Data**		
318	11-Sep-13	9:25	Existing Buildings	50	E3	10.916	0.223	10.916	0.215	1.970
319	11-Sep-13	9:36	No Buildings	50	E3	10.955	0.197	10.955	0.189	1.728
320	11-Sep-13	9:45	No Buildings	25	E3	5.681	0.145	5.681	0.118	2.078
321	11-Sep-13	9:50	No Buildings	50	E3	11.009	0.281	11.009	0.223	2.019
322	11-Sep-13	9:57	No Buildings	25	E3	5.671	0.099	5.671	0.094	1.660
323	11-Sep-13	10:13	Existing Buildings	25	E3	5.649	0.087	5.649	0.084	1.483
324	11-Sep-13	10:18	Existing Buildings	50	E3	10.909	0.203	10.909	0.197	1.804
325	11-Sep-13	10:31	All Buildings	50	E3	10.958	0.216	10.958	0.204	1.862
326	11-Sep-13	10:38	All Buildings	25	E3	5.727	0.124	5.727	0.099	1.725
327	10-Sep-13	7:26	xb = 1 ft	50	E3	11.978	0.979	11.977	0.951	7.952
328	12-Sep-13	7:30	xb = 1 ft	25	E3	6.220	0.428	6.220	0.412	6.621
329	12-Sep-13	7:40	xb = 2 ft	50	E3	11.346	0.475	11.346	0.454	4.005
330	12-Sep-13	7:43	xb = 2 ft	50	E3	11.411	0.660	11.411	0.629	5.522
331	12-Sep-13	7:46	xb = 2 ft	25	E3	5.834	0.364	5.834	0.334	5.710
332	12-Sep-13	7:59	xb = 4 ft	50	E3	10.908	0.382	10.908	0.332	3.053
333	12-Sep-13	8:04	xb = 4 ft	25	E3	5.603	0.199	5.603	0.180	3.217
334	12-Sep-13	8:23	xb = 8 ft	50	E3	10.913	0.253	10.913	0.229	2.091
335	12-Sep-13	8:29	xb = 8 ft	25	E3	5.545	0.093	5.545	0.090	1.631
336	12-Sep-13	8:41	xb = 12 ft	50	E3	10.892	0.214	10.892	0.199	1.826
337	12-Sep-13	8:48	xb = 12 ft	25	E3	5.603	0.084	5.603	0.074	1.328
338	12-Sep-13	8:58	xb = 20 ft	50	E3	10.880	0.183	10.880	0.171	1.575
339	12-Sep-13	9:05	xb = 20 ft	25	E3	5.519	0.071	5.519	0.070	1.271
340	12-Sep-13	9:12	No Blockage	50	E3	10.848	0.171	10.848	0.169	1.555
341	12-Sep-13	9:16	No Blockage	25	E3	5.650	0.135	5.650	0.105	1.850
342	12-Sep-13	9:46	No Blockage	50	E3	10.863	0.200	10.863	0.189	1.738
343	12-Sep-13	9:49	No Blockage	25	E3	5.723	0.153	5.723	0.107	1.857
344	12-Sep-13	10:06	xb = 20 ft.	50	E3	10.992	0.175	10.992	0.168	1.527
345	12-Sep-13	10:13	xb = 20 ft	25	E3	5.744	0.091	5.744	0.086	1.502
346	12-Sep-13	10:24	xb = 12 ft	50	E3	10.986	0.229	10.985	0.196	1.779
347	12-Sep-13	10:31	xb = 12 ft	25	E3	5.708	0.083	5.708	0.077	1.354
348	12-Sep-13	10:42	xb = 8 ft	50	E3	10.878	0.182	10.878	0.178	1.639

Run	Date	Time	External Structures	Blower Frequency (Hz)	Probe Location	Mean (m/s)	St Dev (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
Run Information						**Total Velocity Run Data**		**Averaged 10-Second Interval Data**		
349	12-Sep-13	10:47	xb = 8 ft	25	E3	5.696	0.111	5.695	0.102	1.794
350	12-Sep-13	10:55	xb = 4 ft	50	E3	10.891	0.337	10.891	0.312	2.866
351	12-Sep-13	10:59	xb = 4 ft	25	E3	5.670	0.163	5.670	0.140	2.460

APPENDIX C—ACQUIRED DATA

Run 1
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 09-Aug-13
First Sample Time: 08:09:09.984

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	13.3507	9.6888	11.1452	0.3095
u	13.2000	9.3700	10.7124	0.3012
v	1.2500	-5.8500	-1.3591	1.0430
w	2.4600	-5.4600	-2.2181	1.2694

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.7375	10.3593	11.0337	0.1975	3.4417
2	13.2129	10.1882	11.5657	0.3981	3.1004
3	13.3507	9.6888	11.3306	0.3513	1.8853
4	11.9580	9.8910	10.9720	0.2069	1.6643
5	11.7806	10.2736	10.9857	0.1828	1.7337
6	11.7743	10.3258	11.0113	0.1909	1.5603
7	11.6046	10.3854	10.9963	0.1716	1.9533
8	11.8257	10.3901	11.0753	0.2163	1.7468
9	11.8791	10.4872	11.2384	0.1963	2.3042
10	12.0912	10.4131	11.2435	0.2591	2.1271
		Average	11.1452	0.2371	2.1517
		St Dev	0.1951	0.0770	0.6020

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.5775	-1.0756	-2.7801	0.2535	0.5223	0.8219	2.3969	4.9381	7.7704
2	11.2001	-2.2271	-0.2427	0.4140	0.9626	1.5385	3.6962	8.5945	13.7363
3	10.6544	-3.5292	-0.6995	0.3440	0.8867	1.0679	3.2284	8.3220	10.0234
4	10.7237	-0.9714	-1.9480	0.2031	0.5356	0.6022	1.8935	4.9946	5.6155
5	10.6466	-1.3516	-2.2424	0.1737	0.5070	0.4743	1.6311	4.7616	4.4546
6	10.6120	-1.2718	-2.5693	0.2043	0.4011	0.4999	1.9256	3.7800	4.7110
7	10.6467	-0.9862	-2.4949	0.1759	0.4467	0.4097	1.6519	4.1955	3.8480
8	10.6347	-0.6832	-2.8585	0.1953	0.5625	0.7870	1.8364	5.2888	7.4002
9	10.6555	-0.6459	-3.4474	0.2082	0.4560	0.4957	1.9537	4.2793	4.6520
10	10.7726	-0.8485	-2.8984	0.1920	0.6310	0.9376	1.7820	5.8575	8.7040

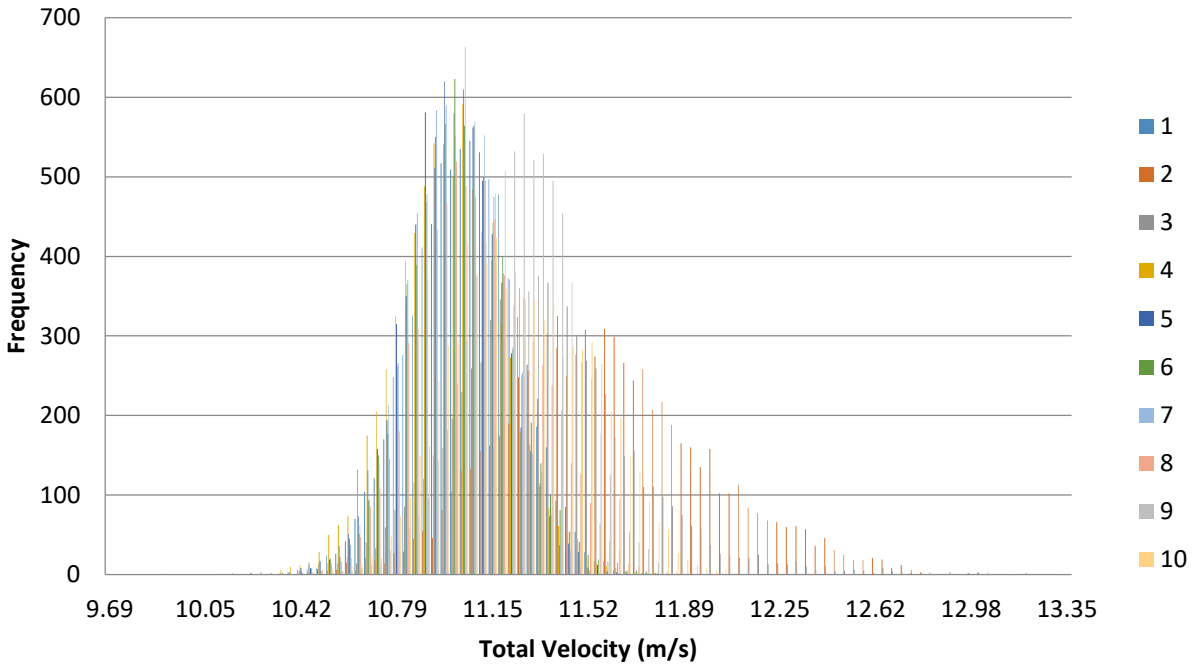


Figure 1. Velocity histogram for each interval (100 bins).

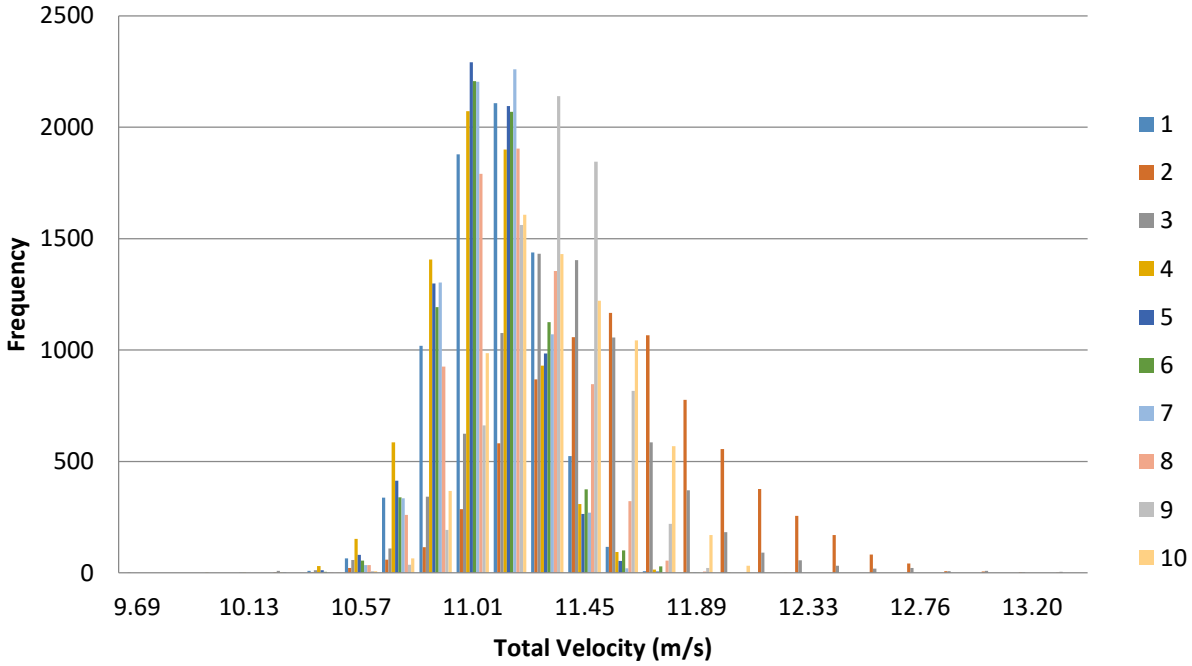
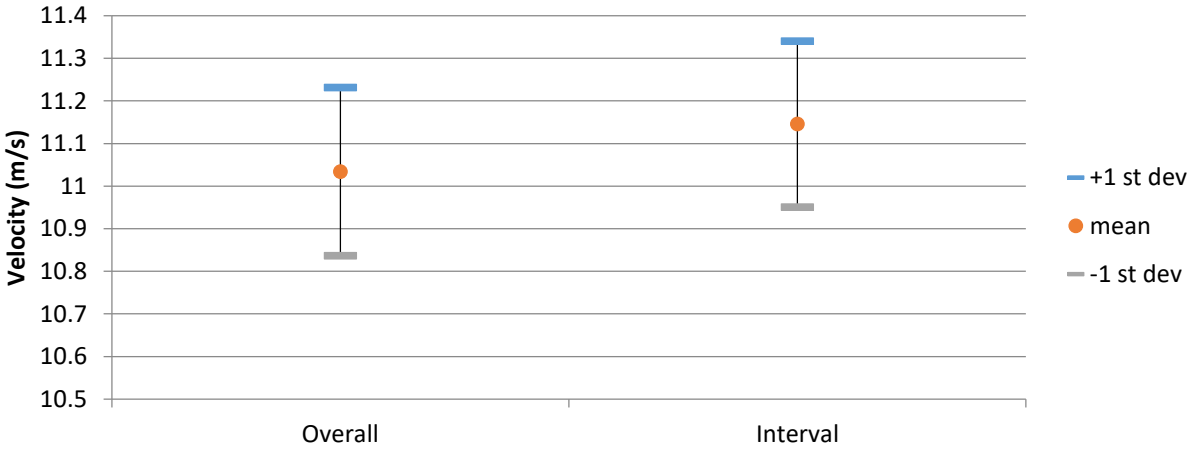
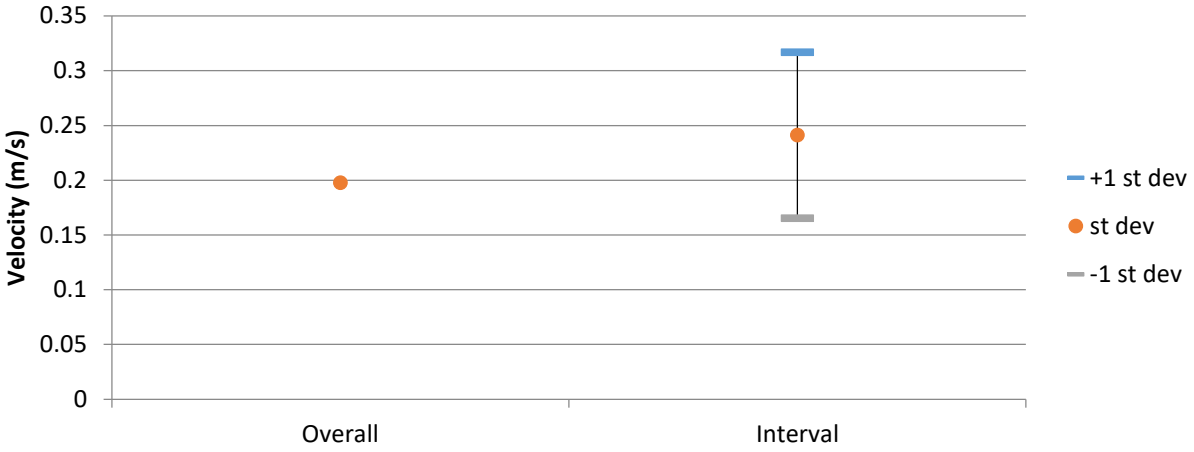


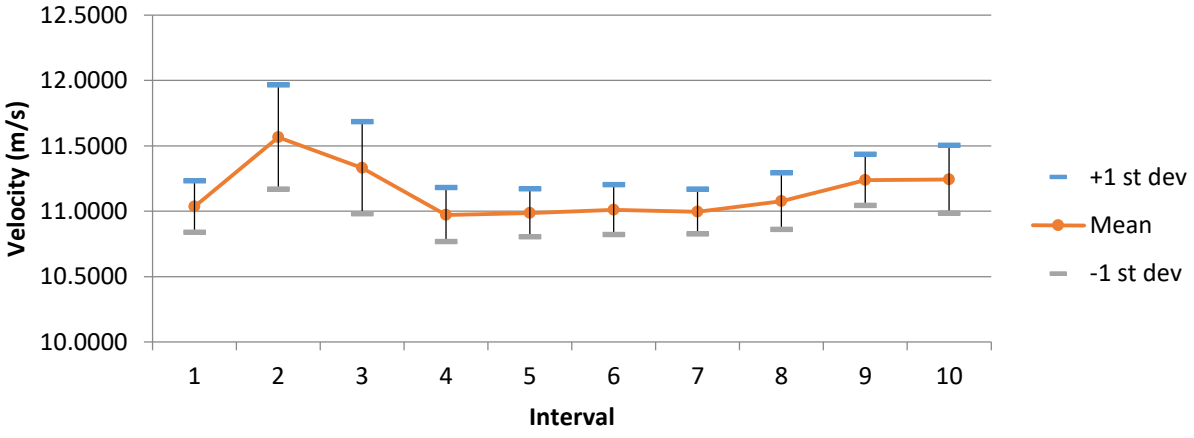
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 2
Blockage Condition: No Buildings.
Blower Frequency: 0 Hz
Inlet Probe Location: E3
First Sample Date: 09-Aug-13
First Sample Time: 08:27:42.203

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	0.9703	0.2719	0.6432	0.0830
u	0.9430	0.2000	0.5667	0.1047
v	0.1380	-0.4150	-0.1620	0.0662
w	0.5410	-0.0342	0.2330	0.0595

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	0.9292	0.3744	0.6680	0.0776	11.6108	55	0.44 %
2	0.9447	0.3348	0.6485	0.0833	12.8471	93	0.74 %
3	0.9243	0.2719	0.6233	0.0838	13.4427	128	1.02 %
4	0.9703	0.3571	0.6559	0.0830	12.6533	60	0.48 %
5	0.9228	0.3121	0.6426	0.0802	12.4859	143	1.14 %
6	0.9127	0.3718	0.6547	0.0763	11.6470	127	1.02 %
7	0.9455	0.3604	0.6423	0.0795	12.3739	125	1.00 %
8	0.9207	0.3448	0.6532	0.0819	12.5376	63	0.50 %
9	0.9001	0.2964	0.6240	0.0832	13.3341	141	1.13 %
10	0.9360	0.2795	0.6188	0.0859	13.8764	148	1.18 %
		Average	0.6431	0.0815	12.6809		
		St dev	0.0155	0.0029	0.6951		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	0.5866	-0.1838	0.2401	0.0998	0.0624	0.0541	17.0120	10.6445	9.2211
2	0.5736	-0.1692	0.2272	0.1050	0.0638	0.0567	18.3081	11.1192	9.8769
3	0.5507	-0.1580	0.2195	0.1059	0.0662	0.0593	19.2231	12.0262	10.7759
4	0.5893	-0.1425	0.2274	0.1029	0.0634	0.0567	17.4686	10.7576	9.6139
5	0.5624	-0.1534	0.2476	0.1027	0.0645	0.0599	18.2615	11.4638	10.6549
6	0.5660	-0.1755	0.2559	0.1004	0.0654	0.0593	17.7407	11.5505	10.4742
7	0.5598	-0.1684	0.2427	0.1024	0.0656	0.0593	18.2885	11.7246	10.5988
8	0.5818	-0.1531	0.2306	0.1033	0.0652	0.0573	17.7608	11.2139	9.8567
9	0.5498	-0.1542	0.2256	0.1057	0.0670	0.0602	19.2159	12.1807	10.9528
10	0.5465	-0.1615	0.2136	0.1082	0.0678	0.0592	19.7918	12.4004	10.8334

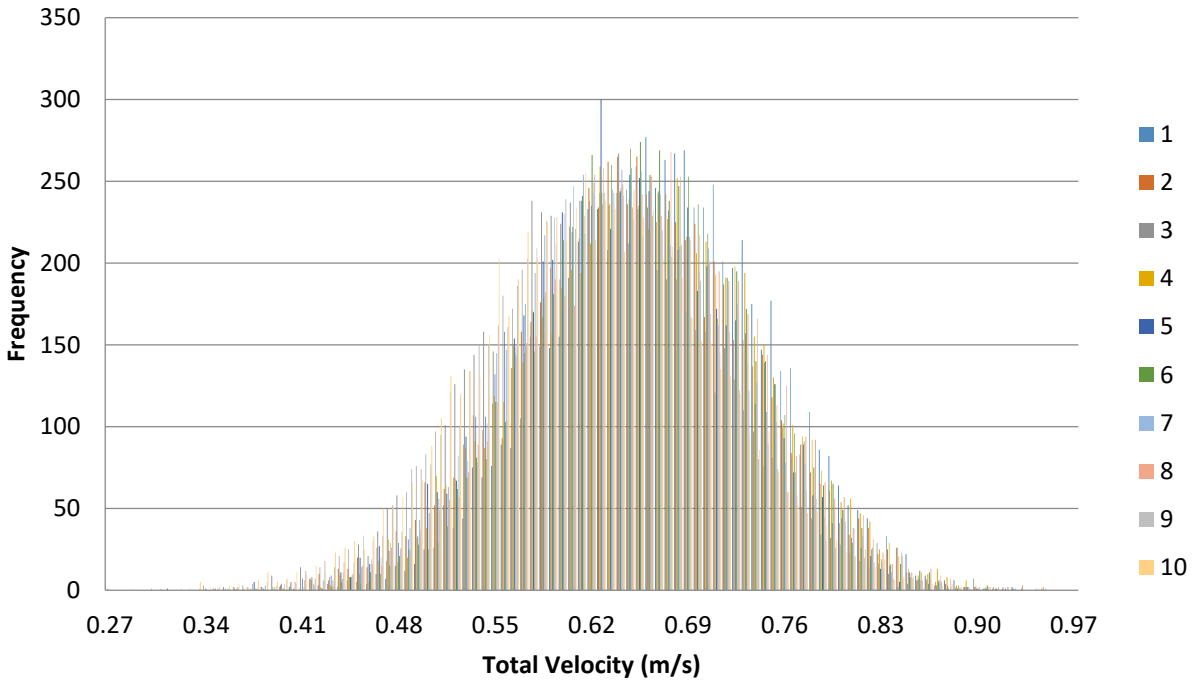


Figure 1. Velocity histogram for each interval (100 bins).

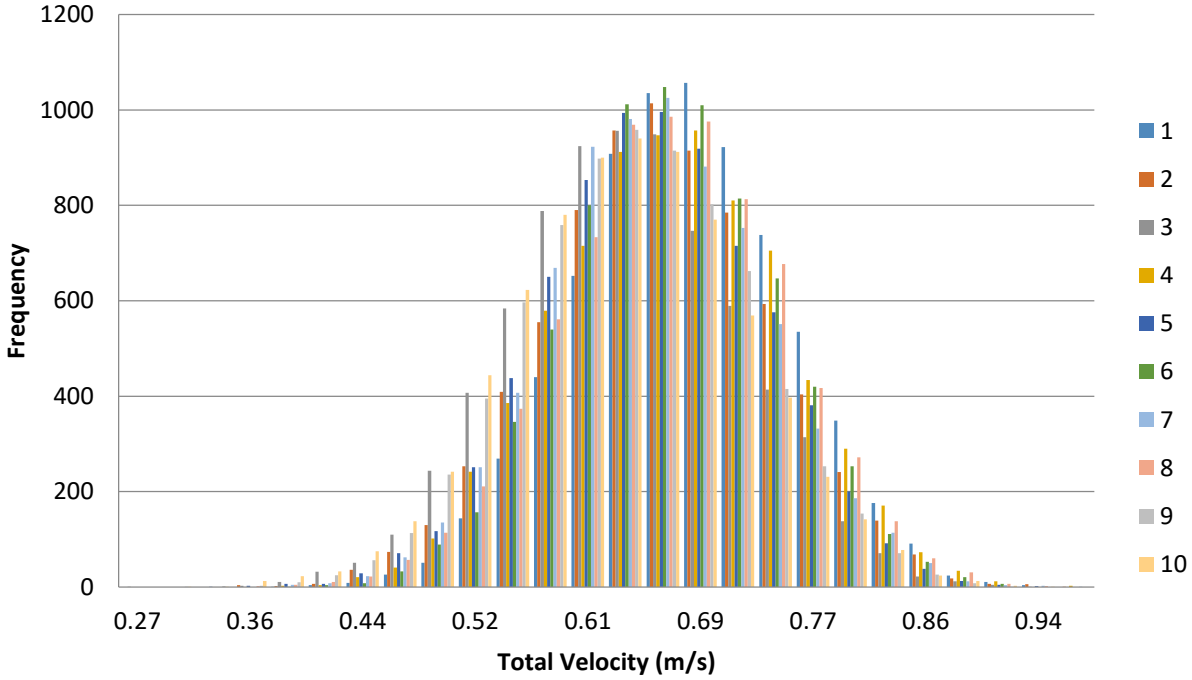
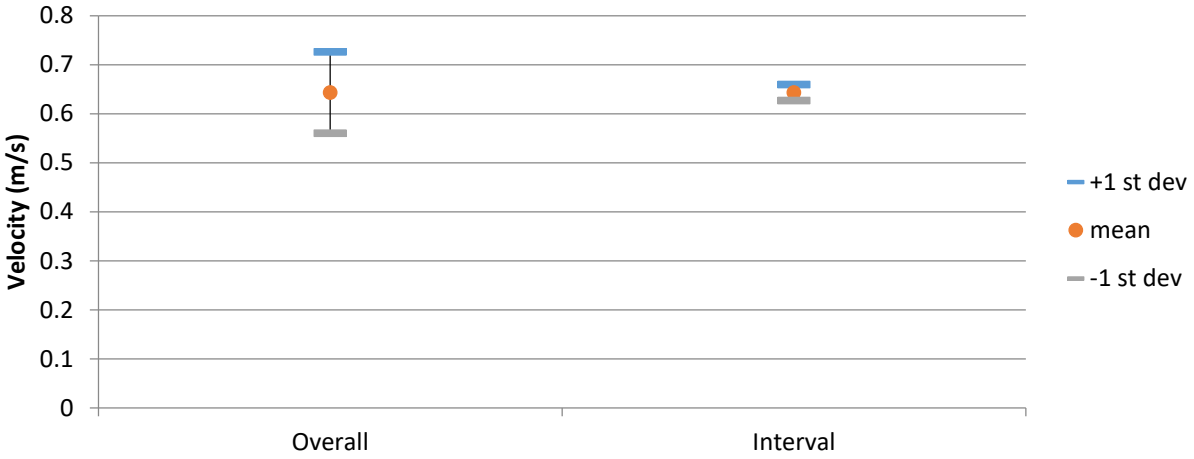
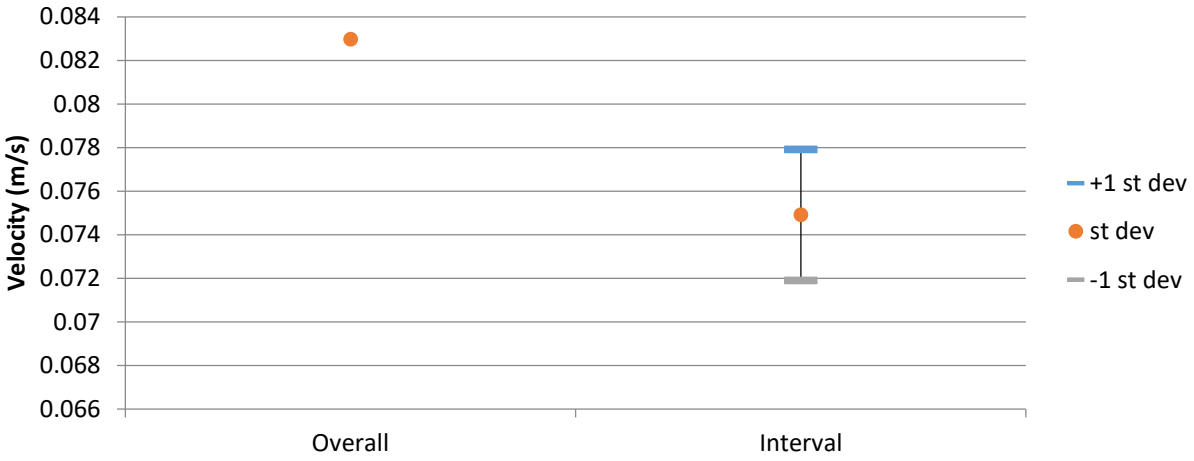


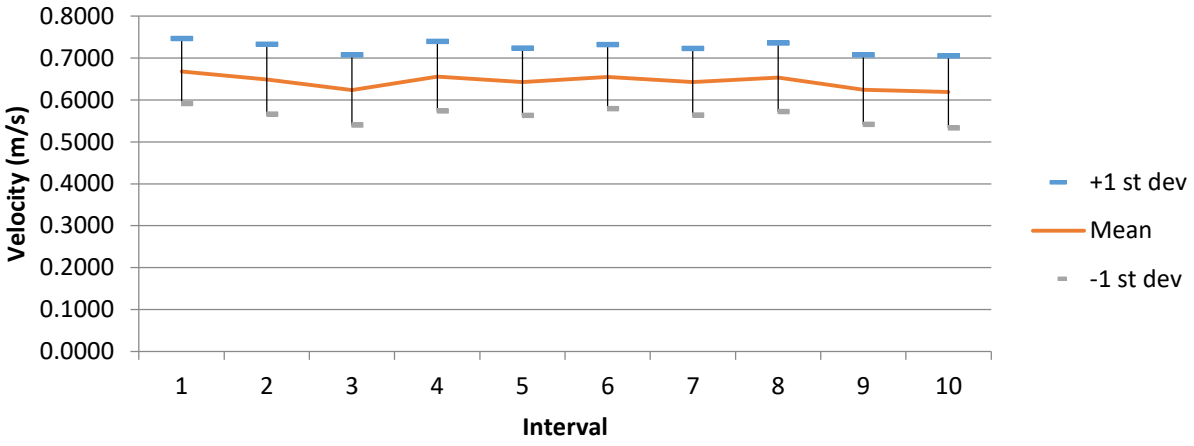
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 3
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 09-Aug-13
First Sample Time: 08:35:36.734

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.8737	10.1948	11.0056	0.1643
u	11.4000	9.5400	10.6304	0.1739
v	1.6100	-2.1300	-0.4610	0.4351
w	-1.0100	-4.6600	-2.7345	0.4845

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.5970	10.4323	10.9852	0.1497	1.3680
2	11.5621	10.4640	11.0100	0.1506	1.3553
3	11.5386	10.4948	10.9866	0.1489	1.3488
4	11.5174	10.5026	11.0036	0.1484	1.3234
5	11.5477	10.5392	11.0454	0.1462	1.4015
6	11.6052	10.4133	11.0607	0.1550	1.6307
7	11.7967	10.3347	11.0224	0.1797	1.6599
8	11.8737	10.3668	11.0362	0.1832	1.5837
9	11.5882	10.1948	10.9466	0.1734	1.5005
10	11.5517	10.3375	10.9593	0.1644	1.4534
		Average	11.0056	0.1600	1.4625
		St Dev	0.0369	0.0141	0.1183

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.6319	-0.6150	-2.6815	0.1521	0.2190	0.1422	1.4302	2.0595	1.3371
2	10.5580	-0.5918	-3.0551	0.1574	0.1971	0.1527	1.4905	1.8668	1.4463
3	10.5723	-0.5359	-2.9180	0.1618	0.1570	0.3191	1.5302	1.4846	3.0182
4	10.6423	-0.7800	-2.6697	0.1463	0.1942	0.2191	1.3747	1.8247	2.0583
5	10.5907	-0.4981	-3.0843	0.1503	0.2280	0.1523	1.4196	2.1531	1.4377
6	10.6396	-0.3127	-2.9710	0.1581	0.3089	0.3432	1.4863	2.9033	3.2255
7	10.6363	0.0410	-2.7843	0.1939	0.4022	0.6649	1.8233	3.7812	6.2511
8	10.6783	-0.2565	-2.6361	0.1799	0.6718	0.5545	1.6850	6.2909	5.1924
9	10.6379	-0.8724	-2.3126	0.2048	0.3493	0.6484	1.9252	3.2832	6.0951
10	10.7170	-0.1888	-2.2326	0.1645	0.3914	0.2816	1.5353	3.6520	2.6279

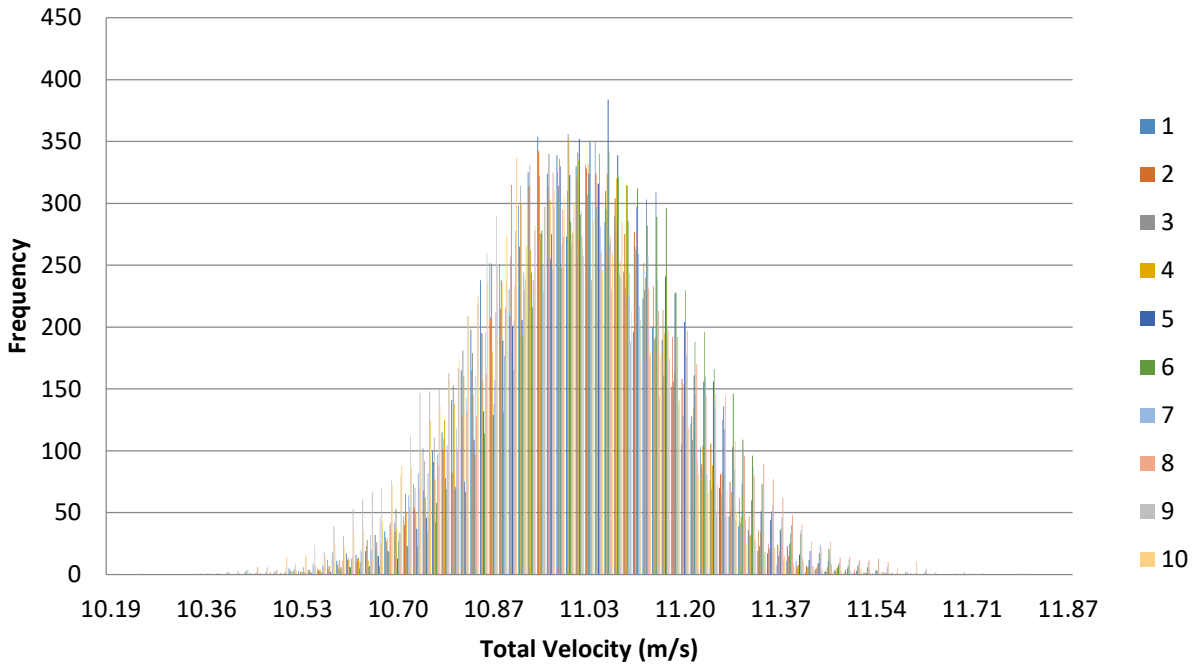


Figure 1. Velocity histogram for each interval (100 bins).

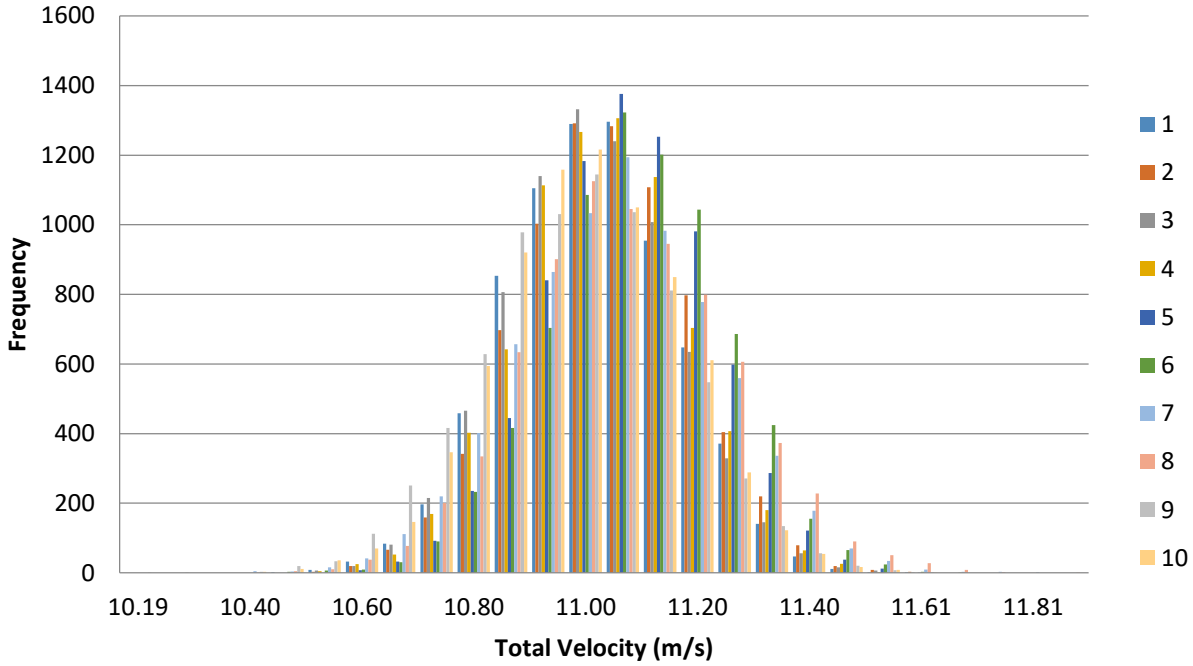
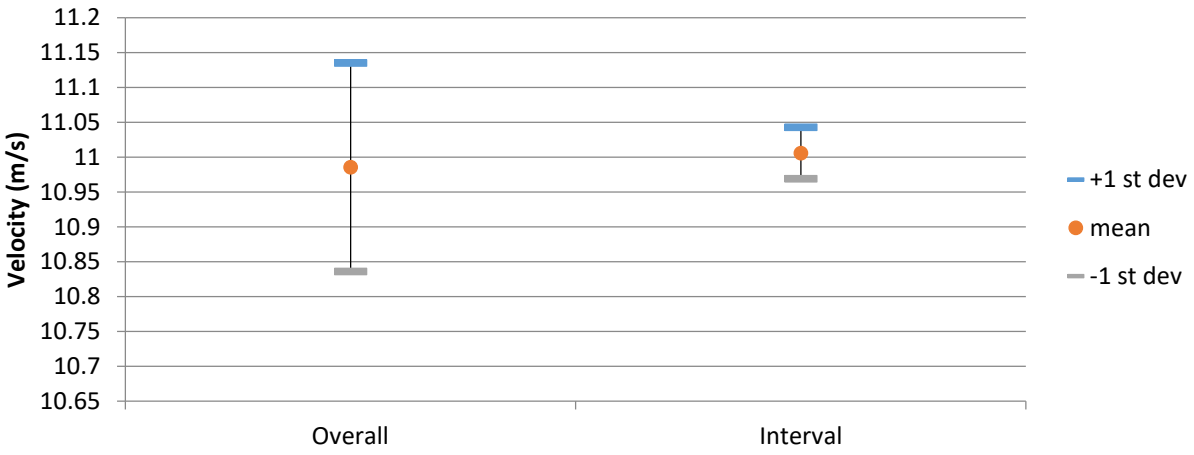
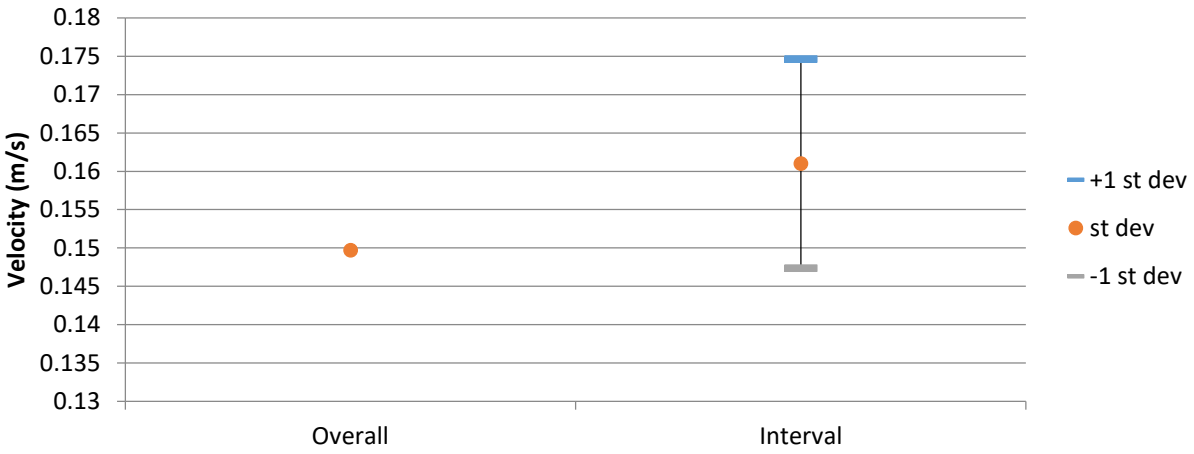


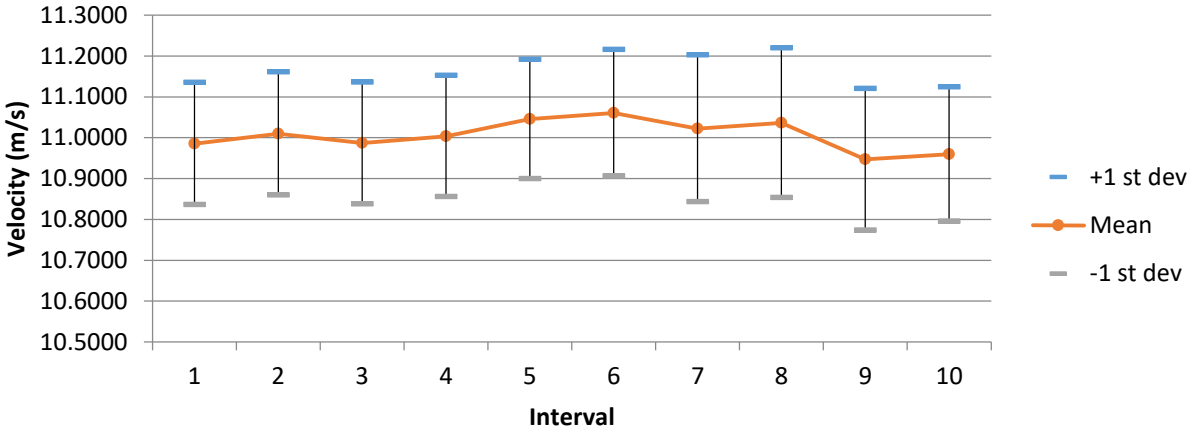
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 4
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E2
First Sample Date: 09-Aug-13
First Sample Time: 08:41:27.781

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	15.8987	11.4007	13.3469	0.3630
u	13.7000	8.8300	11.2107	0.5337
v	6.7900	-3.9300	1.0191	0.9859
w	-4.3000	-11.4000	-7.0696	0.5626

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	13.7212	12.5360	13.1297	0.1574	1.1987	0	0.00 %
2	15.1586	12.3821	13.2971	0.3371	2.5353	0	0.00 %
3	14.8393	12.3153	13.3908	0.3373	2.5192	0	0.00 %
4	15.5902	12.2015	13.4089	0.3436	2.5628	1	0.01 %
5	15.8987	11.4007	13.4378	0.2262	1.6835	18	0.14 %
6	15.7905	12.0388	13.5173	0.4749	3.5132	1	0.01 %
7	15.8388	12.1904	13.5123	0.4518	3.3434	0	0.00 %
8	15.3313	12.3958	13.3275	0.4156	3.1181	0	0.00 %
9	15.0340	11.5213	13.2048	0.2690	2.0374	0	0.00 %
10	15.3176	11.7256	13.2431	0.2646	1.9979	0	0.00 %
		Average	13.3470	0.3278	2.4510		
		St dev	0.1231	0.0959	0.7020		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.9510	1.9664	-6.9507	0.2745	0.4212	0.2438	2.5067	3.8458	2.2266
2	11.2975	1.1962	-6.8630	0.4932	0.5238	0.4935	4.3655	4.6363	4.3683
3	11.3167	0.4656	-7.0839	0.4895	0.6846	0.5051	4.3253	6.0492	4.4632
4	11.2462	0.5450	-7.2146	0.5094	0.7688	0.4916	4.5299	6.8362	4.3710
5	11.0135	-0.3337	-7.6509	0.4265	0.4770	0.5221	3.8728	4.3307	4.7401
6	11.4311	0.7009	-7.1142	0.6135	0.6278	0.6315	5.3673	5.4923	5.5241
7	11.5999	0.9314	-6.8052	0.5461	0.6527	0.5712	4.7081	5.6270	4.9239
8	11.2206	2.0667	-6.7646	0.6023	1.1005	0.5379	5.3681	9.8083	4.7935
9	11.0030	1.5906	-7.0711	0.4421	0.6559	0.4657	4.0177	5.9614	4.2325
10	11.0274	1.0585	-7.1794	0.4614	0.8359	0.5196	4.1840	7.5806	4.7120

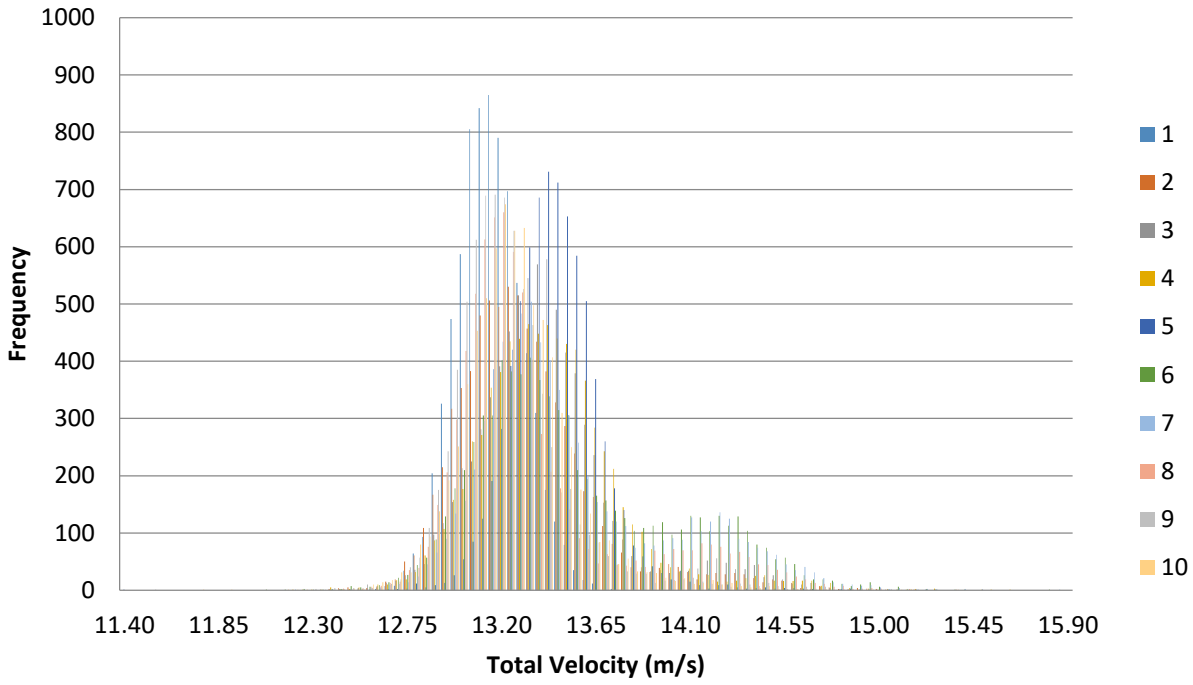


Figure 1. Velocity histogram for each interval (100 bins).

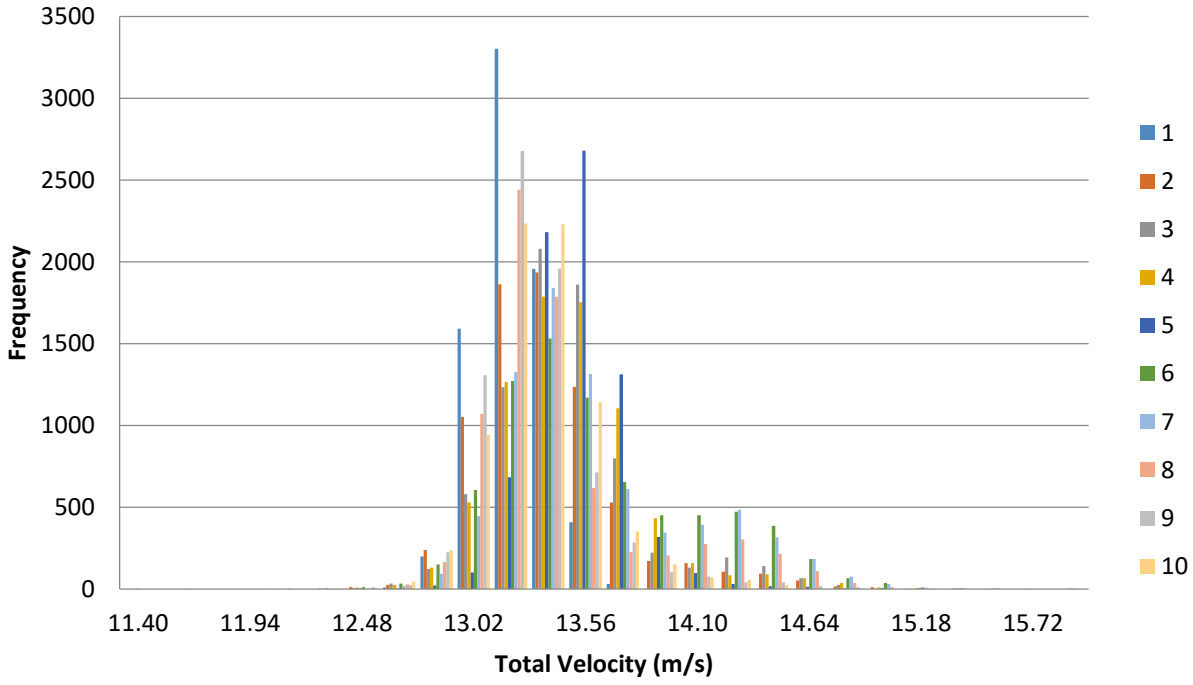
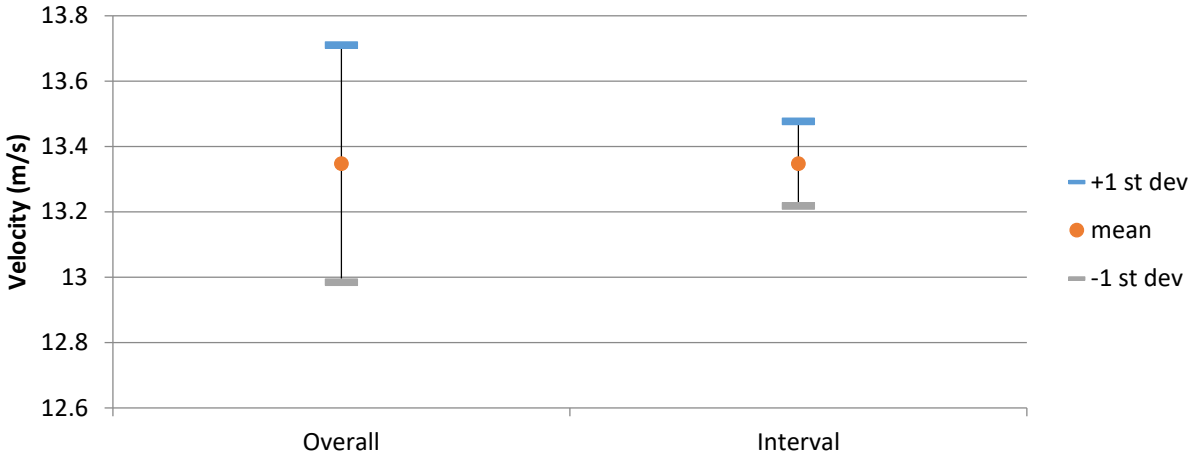
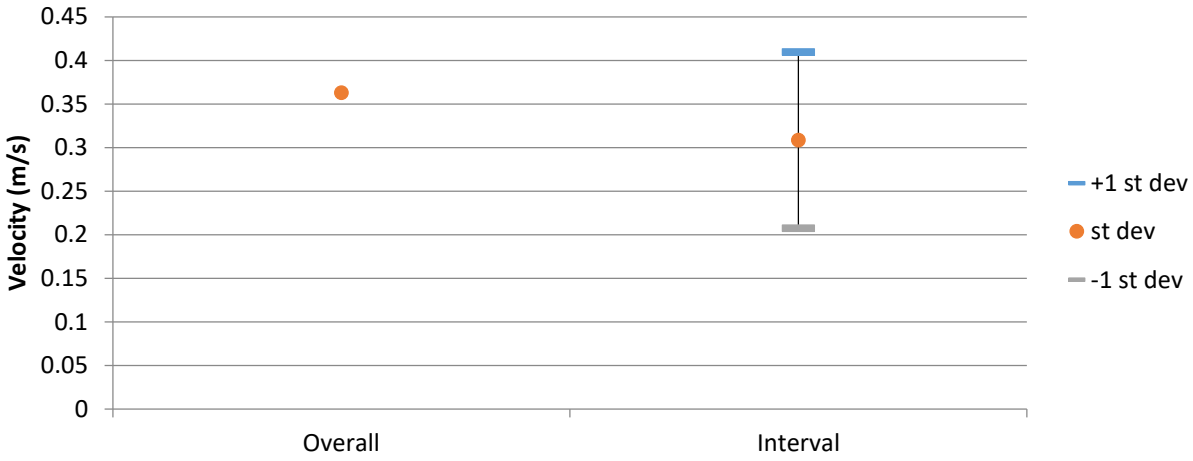


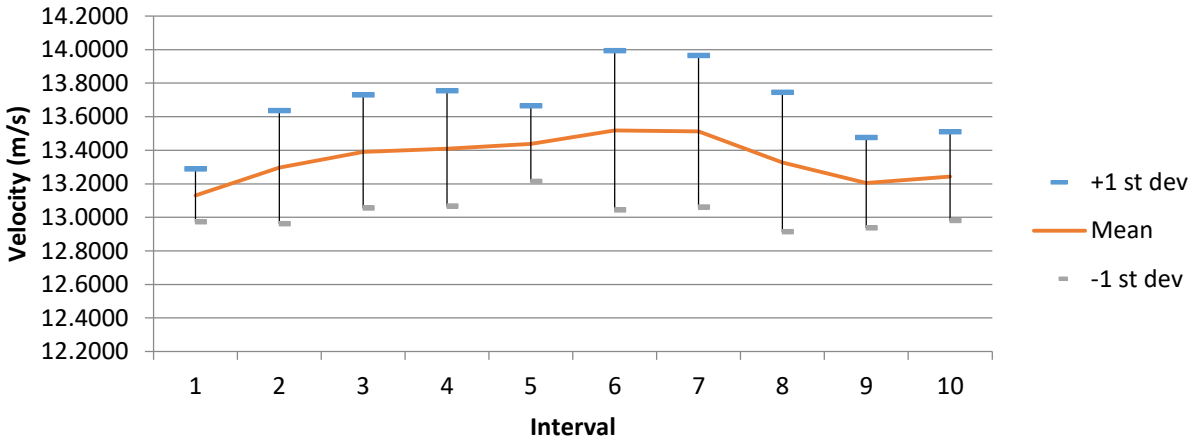
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 5
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E4
First Sample Date: 09-Aug-13
First Sample Time: 08:45:42.500

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.2478	8.7531	10.6640	0.3906
u	11.9000	8.3400	10.4374	0.3592
v	4.7300	-1.6800	1.1444	0.9311
w	3.4300	-3.9200	-1.3112	0.9536

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	12.0792	10.2194	11.1842	0.2636	2.9504
2	12.2478	9.5366	10.9949	0.3244	2.8456
3	11.7141	9.4134	10.7937	0.3071	3.3147
4	12.0373	8.8061	10.5981	0.3513	3.3556
5	11.9005	8.7531	10.5630	0.3544	3.1485
6	11.5593	8.8072	10.5133	0.3310	3.0782
7	11.5407	8.9884	10.4163	0.3206	2.7255
8	11.4256	9.5041	10.4914	0.2859	2.7379
9	11.4477	9.4274	10.5331	0.2884	2.5987
10	11.5695	9.5417	10.5521	0.2742	2.9080
		Average	10.6640	0.3101	2.9663
		St Dev	0.2483	0.0315	0.2413

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.7854	1.9608	-2.0978	0.3184	0.5634	0.4079	2.9522	5.2238	3.7818
2	10.5248	2.3339	-1.8438	0.3250	0.6842	0.8952	3.0879	6.5004	8.5051
3	10.5305	1.6116	-1.4215	0.3308	0.7409	0.6561	3.1410	7.0355	6.2307
4	10.3837	1.3091	-0.5658	0.3845	0.6761	1.4082	3.7025	6.5109	13.5613
5	10.3911	1.3794	-0.6194	0.3753	0.7042	0.8968	3.6119	6.7765	8.6304
6	10.3277	1.1871	-0.8538	0.3375	0.8295	1.0190	3.2675	8.0320	9.8665
7	10.3470	0.5087	-0.7872	0.3340	0.5801	0.4637	3.2281	5.6060	4.4815
8	10.3943	0.3511	-1.2531	0.3026	0.3533	0.4463	2.9113	3.3993	4.2934
9	10.3831	0.7139	-1.5224	0.3104	0.4401	0.3208	2.9892	4.2385	3.0893
10	10.3063	0.0885	-2.1475	0.2960	0.5675	0.4163	2.8722	5.5060	4.0395

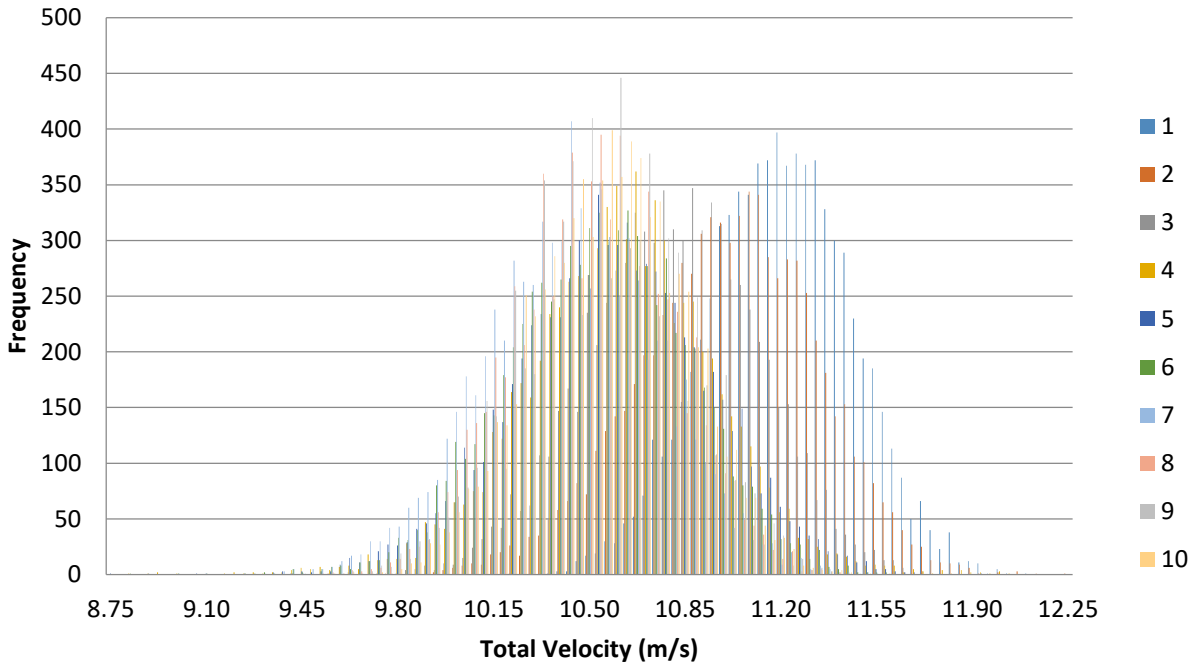


Figure 1. Velocity histogram for each interval (100 bins).

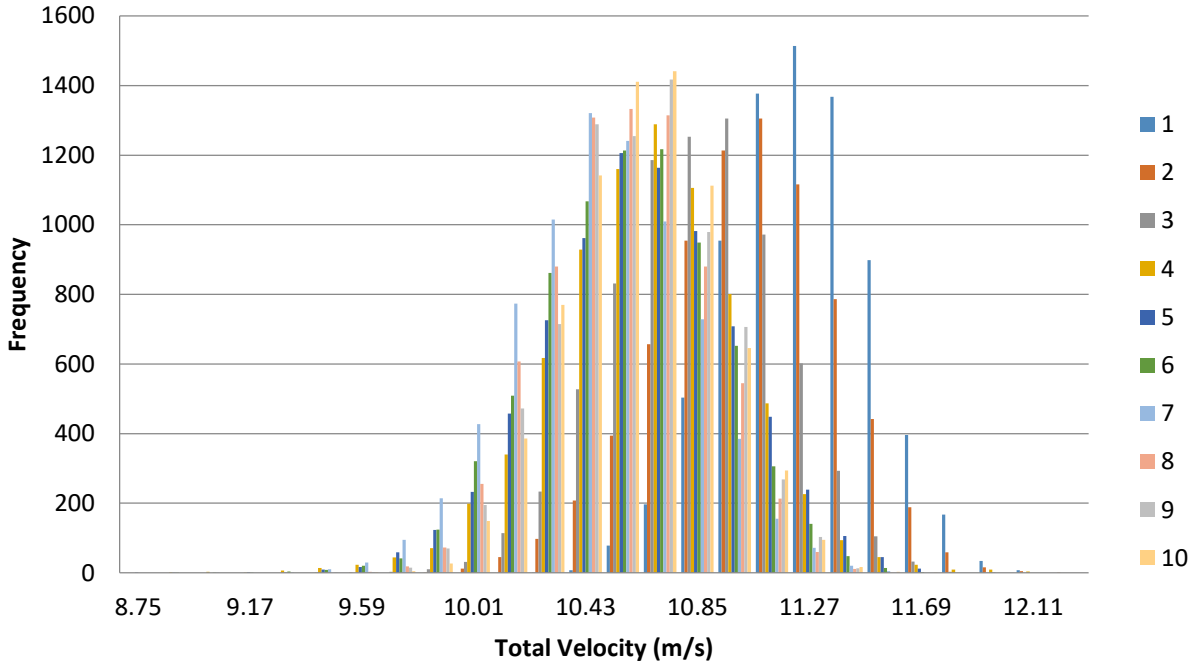
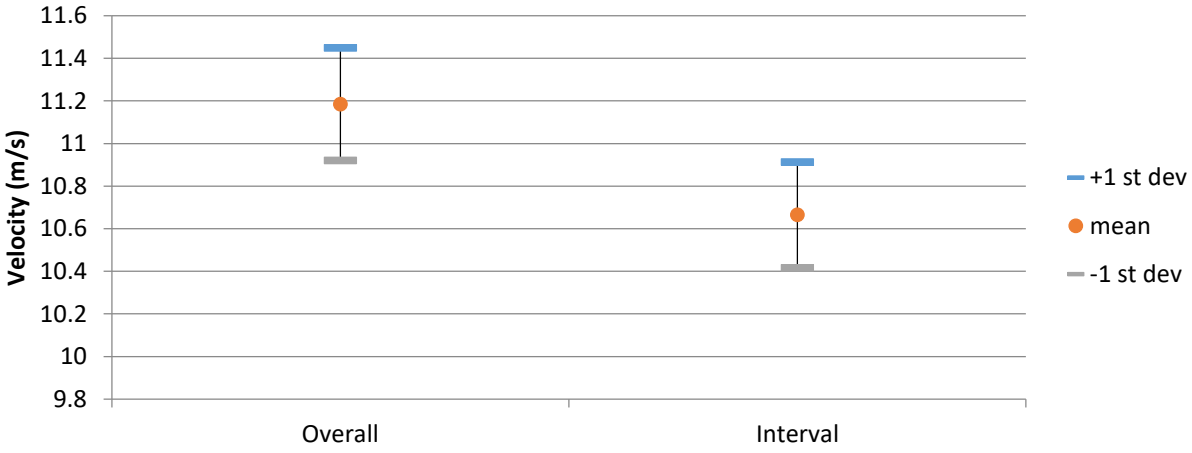
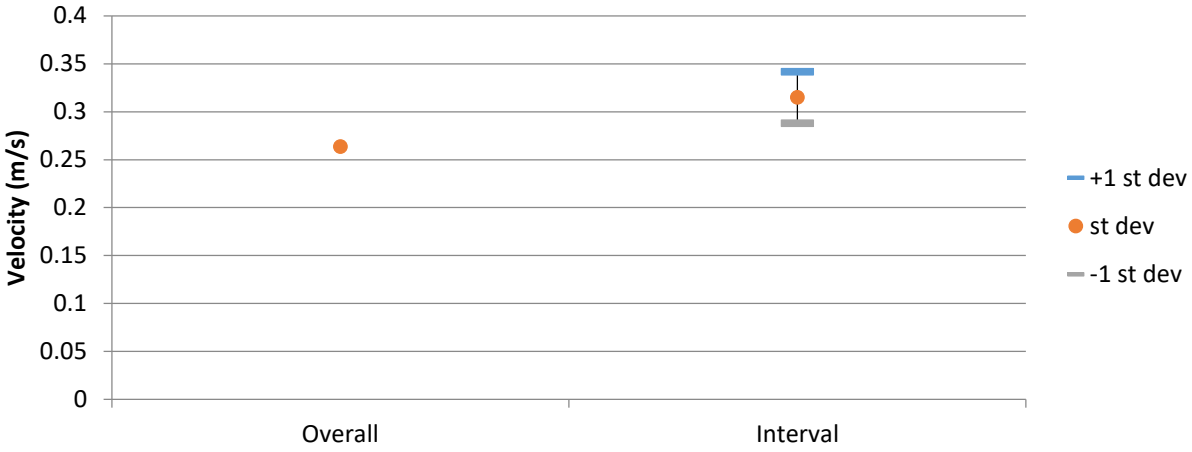


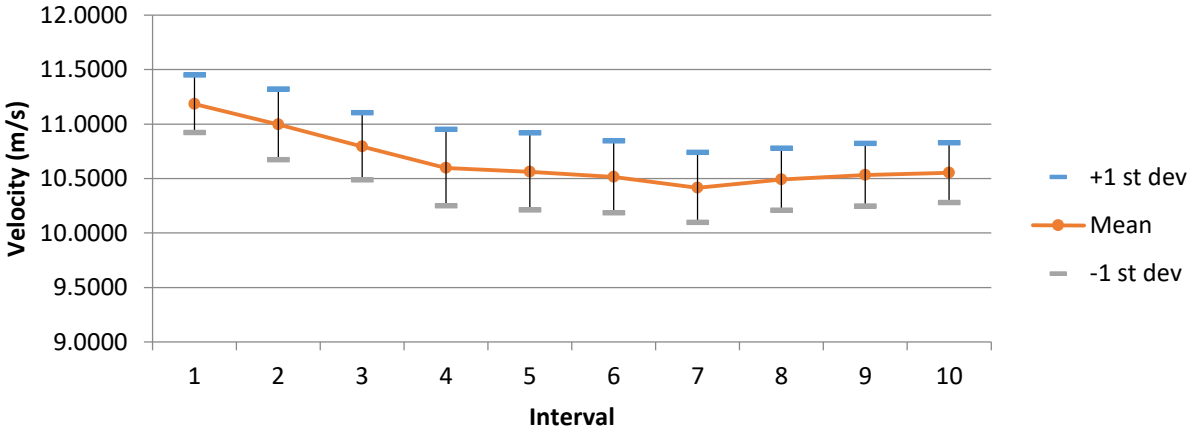
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 6
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E5
First Sample Date: 09-Aug-13
First Sample Time: 08:47:25.421

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.1441	8.2907	10.2628	0.2753
u	12.0000	8.2000	10.0916	0.2706
v	4.1400	-2.2500	0.8339	0.8808
w	1.9100	-4.0900	-1.2842	0.6061

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.6444	8.9293	10.1641	0.2559	2.4905
2	11.5306	9.2816	10.1810	0.2536	2.2941
3	11.2592	9.4511	10.2534	0.2352	2.4325
4	11.4589	9.4660	10.3227	0.2511	2.5623
5	11.3629	8.7539	10.2629	0.2630	2.6603
6	11.3548	8.2907	10.1728	0.2706	2.3206
7	11.1127	9.2875	10.2211	0.2372	2.7159
8	12.0740	9.1012	10.4868	0.2848	2.8603
9	12.1441	8.9838	10.3207	0.2952	2.3698
10	11.5644	8.7157	10.2423	0.2427	2.5230
		Average	10.2628	0.2589	2.5229
		St Dev	0.0966	0.0198	0.1725

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.9958	0.6413	-1.5020	0.2667	0.6231	0.5769	2.6683	6.2336	5.7711
2	10.0618	0.2075	-1.2204	0.2594	0.6711	0.6548	2.5786	6.6699	6.5073
3	10.1301	0.9456	-1.1525	0.2529	0.4234	0.3206	2.4967	4.1792	3.1645
4	10.1204	1.4644	-1.2060	0.2567	0.5571	0.4735	2.5362	5.5049	4.6789
5	10.0678	0.8114	-1.3998	0.2755	0.8831	0.7498	2.7366	8.7718	7.4471
6	10.0241	-0.0136	-1.3578	0.2792	0.7611	0.7595	2.7858	7.5926	7.5769
7	10.1030	0.7167	-1.0767	0.2481	0.7312	0.4334	2.4560	7.2371	4.2902
8	10.1356	2.1591	-1.3786	0.2758	0.5968	0.5753	2.7211	5.8879	5.6760
9	10.1433	0.8862	-1.3985	0.2879	0.6282	0.7074	2.8381	6.1937	6.9744
10	10.1340	0.5204	-1.1497	0.2562	0.5969	0.5006	2.5278	5.8899	4.9399

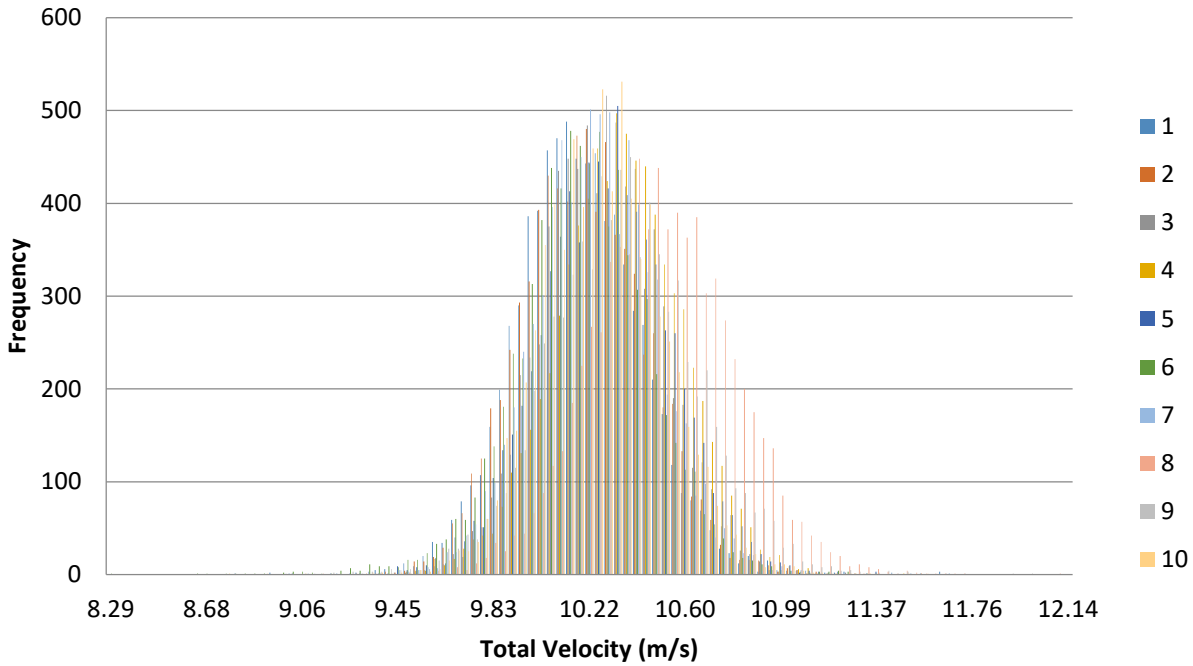


Figure 1. Velocity histogram for each interval (100 bins).

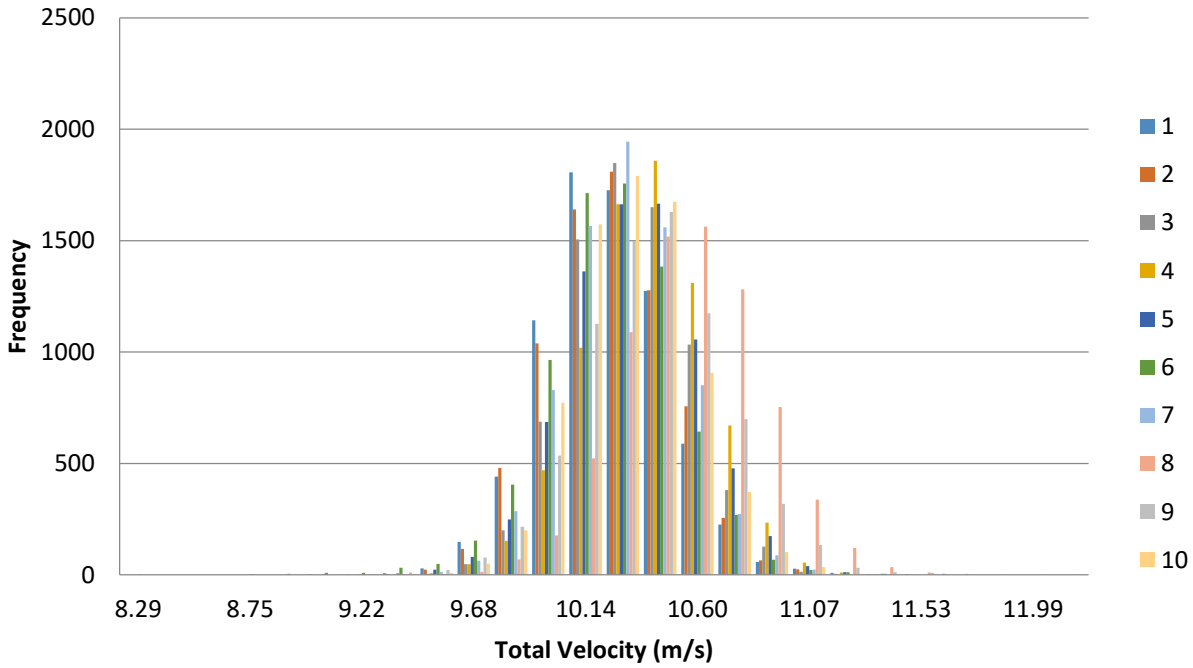
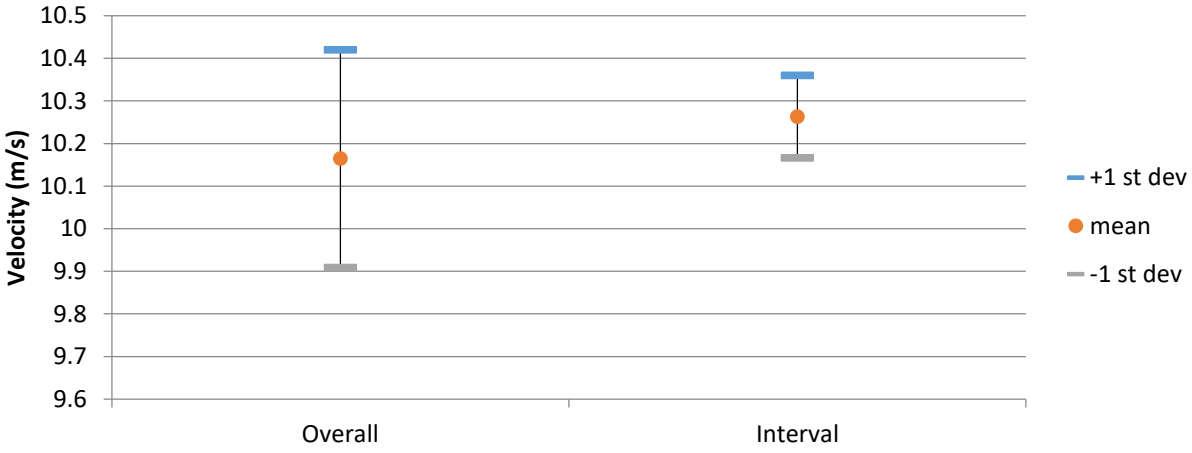
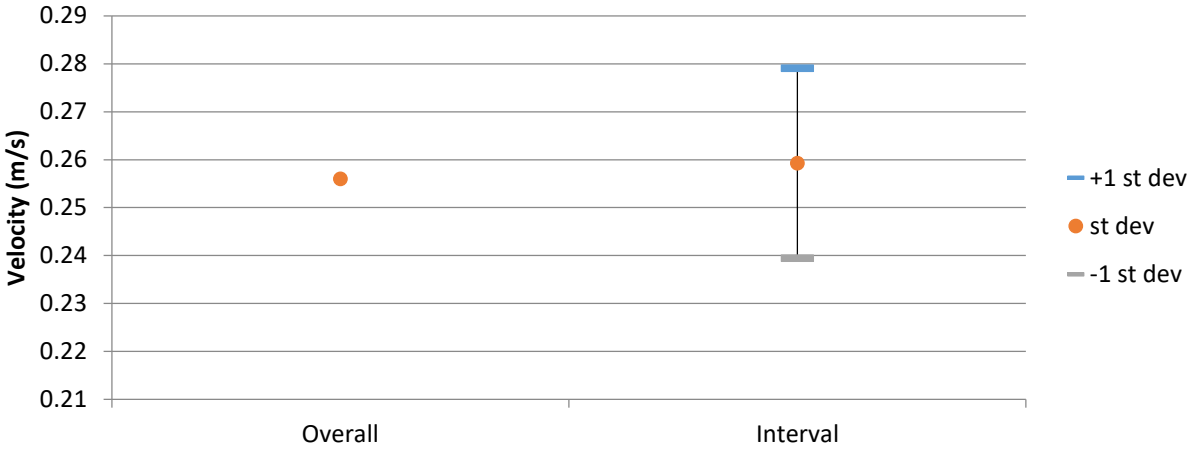


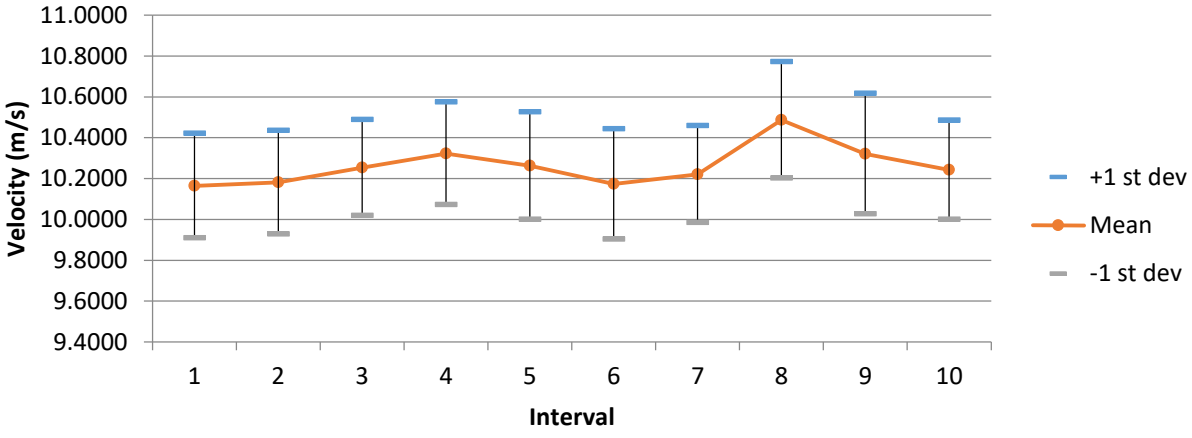
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 7
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 09-Aug-13
First Sample Time: 08:50:07.937

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	14.5931	9.6595	11.2666	0.4072
u	12.9000	7.9700	10.5657	0.4173
v	1.7800	-6.6500	-1.7981	1.0553
w	0.1710	-8.9100	-3.0677	1.2404

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	12.9837	10.1277	11.2770	0.3705	1.6395
2	11.7007	10.3442	10.9578	0.1797	2.4292
3	12.0350	10.3652	11.1555	0.2710	2.5546
4	12.9478	9.6595	11.4247	0.2919	3.4082
5	13.9143	10.0897	11.6194	0.3960	3.5496
6	13.7001	10.5061	11.5885	0.4113	3.8875
7	14.5931	10.1315	11.6250	0.4519	1.6714
8	12.0028	10.3771	11.0975	0.1855	1.4984
9	11.6425	10.4567	10.9879	0.1646	1.6259
10	11.5900	10.2114	10.9328	0.1778	2.5741
		Average	11.2666	0.2900	2.4838
		St Dev	0.2803	0.1108	0.8401

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.7113	-2.6342	-2.1128	0.2772	0.7813	0.6988	2.5877	7.2941	6.5236
2	10.7524	-1.1782	-1.6319	0.1840	0.4145	0.4859	1.7114	3.8548	4.5189
3	10.6047	-1.8823	-2.6562	0.3010	0.4130	1.0952	2.8385	3.8941	10.3274
4	10.4287	-2.2198	-3.8699	0.4183	1.0132	0.8644	4.0107	9.7151	8.2882
5	10.1831	-1.7010	-4.9467	0.8040	1.0887	1.5094	7.8956	10.6913	14.8223
6	10.6829	-2.7497	-3.1763	0.4747	0.9877	1.2195	4.4433	9.2456	11.4159
7	10.7255	-2.8191	-3.2479	0.3620	0.9911	0.8372	3.3750	9.2406	7.8057
8	10.4843	-0.9162	-3.4556	0.1775	0.5754	0.3550	1.6931	5.4886	3.3864
9	10.4976	-0.9331	-3.0829	0.1653	0.2970	0.2675	1.5751	2.8294	2.5478
10	10.5861	-0.9472	-2.4960	0.1743	0.3461	0.4620	1.6466	3.2695	4.3642

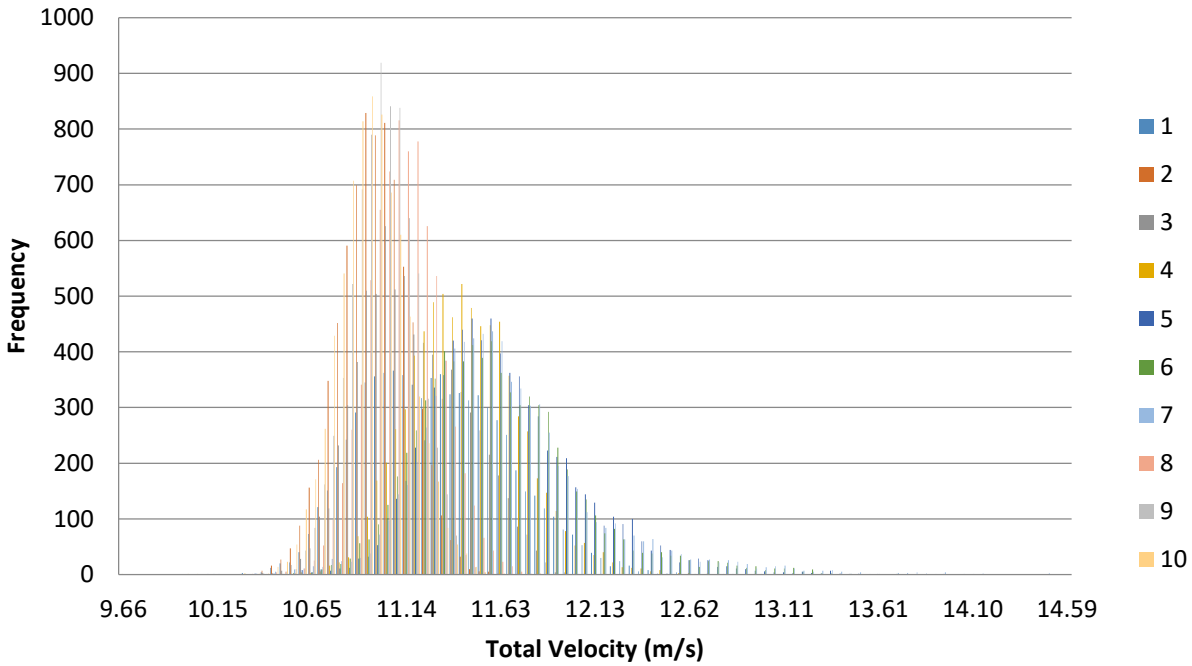


Figure 1. Velocity histogram for each interval (100 bins).

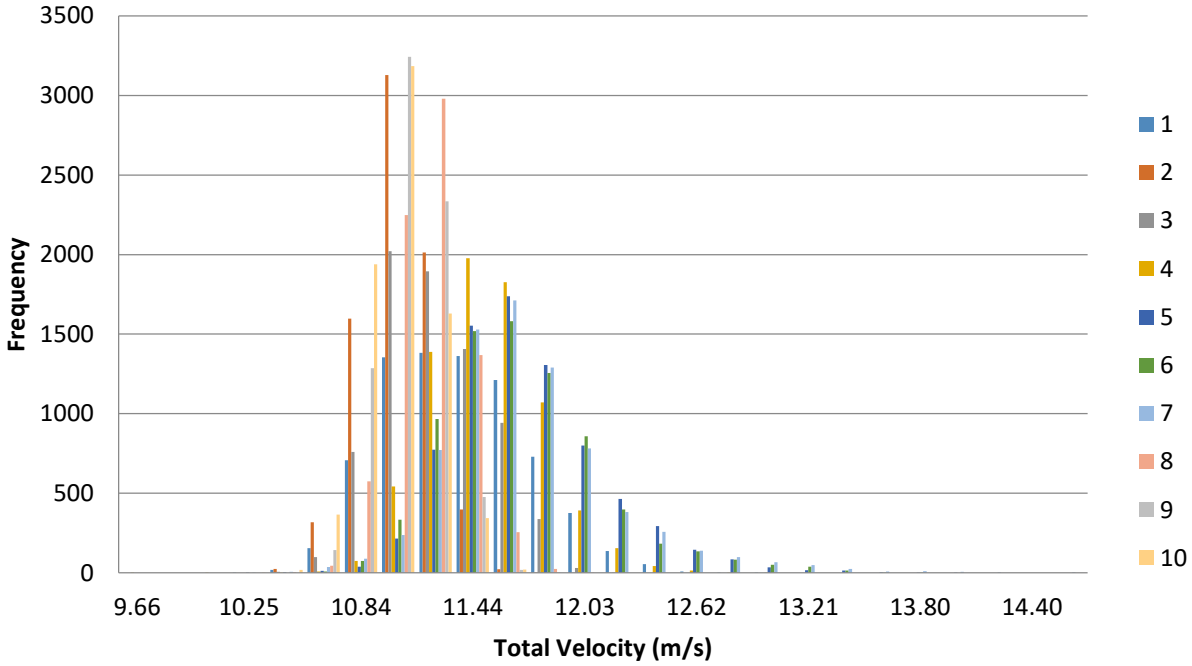
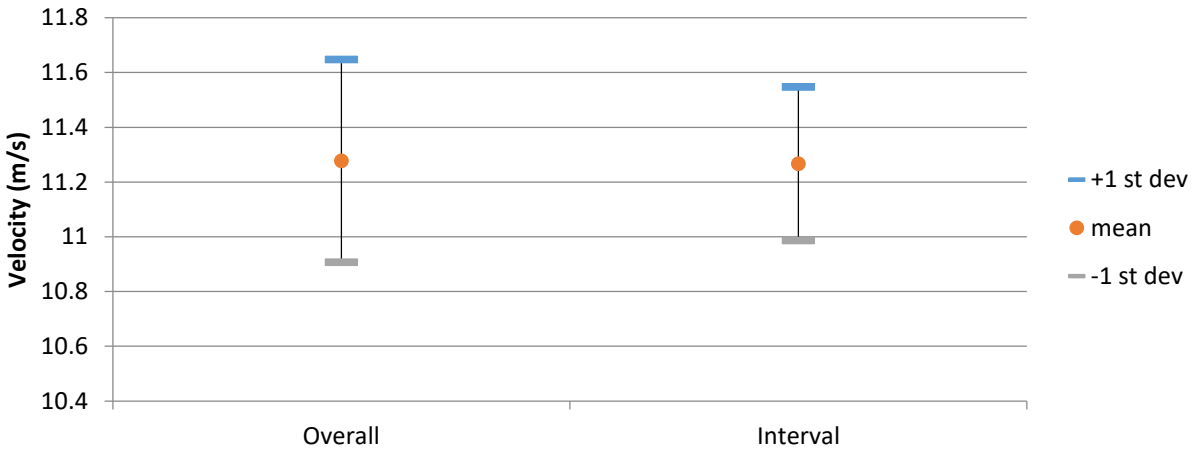
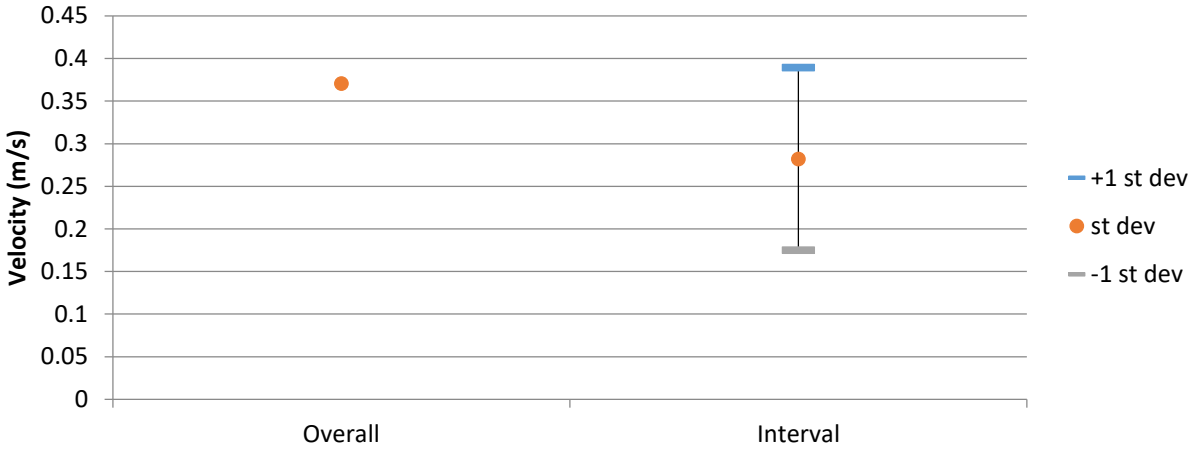


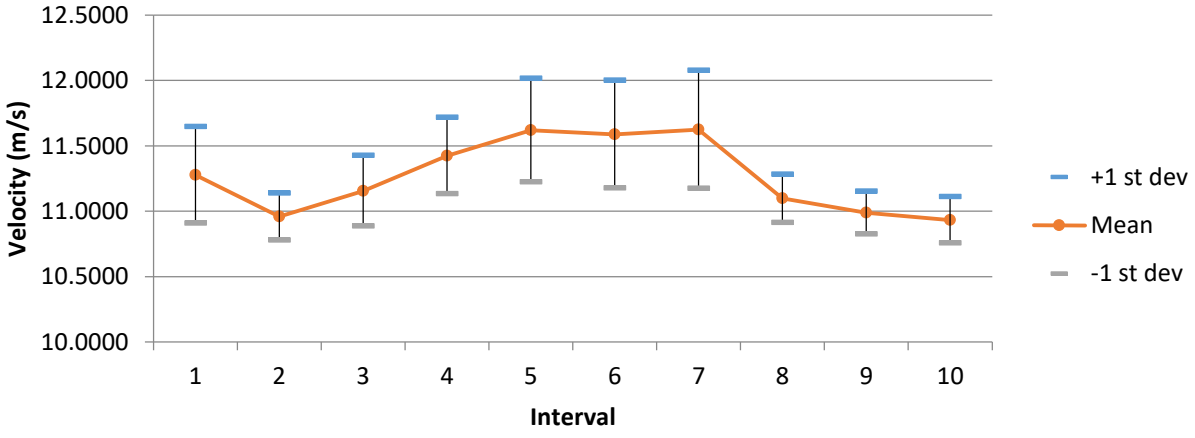
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 8
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: A3
First Sample Date: 09-Aug-13
First Sample Time: 08:53:44.531

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.6839	6.9304	8.7288	0.5133
u	9.6700	4.6400	6.4342	0.4440
v	-1.8000	-7.3600	-5.7185	0.6511
w	5.2100	-2.7400	0.2850	1.2858

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	10.8516	7.0966	8.2295	0.3587	4.3587	169	1.35 %
2	9.9077	6.9304	8.2383	0.2954	3.5859	219	1.75 %
3	10.3701	7.3275	8.4323	0.2587	3.0675	315	2.52 %
4	11.6839	7.3959	8.4769	0.3000	3.5385	349	2.79 %
5	9.3539	7.7300	8.5634	0.2103	2.4552	347	2.78 %
6	10.3312	8.2047	8.9735	0.2587	2.8834	0	0.00 %
7	11.2439	8.2187	9.2017	0.3710	4.0321	1	0.01 %
8	10.6918	7.9891	8.9168	0.3697	4.1460	20	0.16 %
9	10.6611	7.8140	8.8763	0.4411	4.9695	4	0.03 %
10	10.8162	7.9219	9.3230	0.5526	5.9270	0	0.00 %
		Average	8.7232	0.3416	3.8964		
		St dev	0.3690	0.0955	0.9790		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	6.5807	-4.7087	1.0438	0.5406	0.6290	0.7744	8.2146	9.5588	11.7675
2	6.1353	-5.0589	1.9654	0.4082	0.5204	0.6499	6.6535	8.4817	10.5924
3	6.2577	-5.3320	1.6499	0.3928	0.4481	0.7098	6.2771	7.1615	11.3421
4	6.2338	-5.4531	1.5166	0.3692	0.4257	0.8565	5.9226	6.8283	13.7401
5	6.1107	-5.8940	0.8057	0.2605	0.3180	0.6914	4.2623	5.2034	11.3150
6	6.4873	-6.1763	-0.4407	0.2534	0.2058	0.2403	3.9059	3.1719	3.7049
7	6.6010	-6.3582	-0.7488	0.3133	0.2450	0.2972	4.7467	3.7120	4.5016
8	6.4371	-6.1290	-0.6165	0.3254	0.2725	0.2894	5.0545	4.2340	4.4965
9	6.5904	-5.8749	-0.7725	0.3889	0.3657	0.3912	5.9007	5.5496	5.9354
10	6.8707	-6.1391	-1.3509	0.4515	0.3005	0.4574	6.5713	4.3736	6.6577

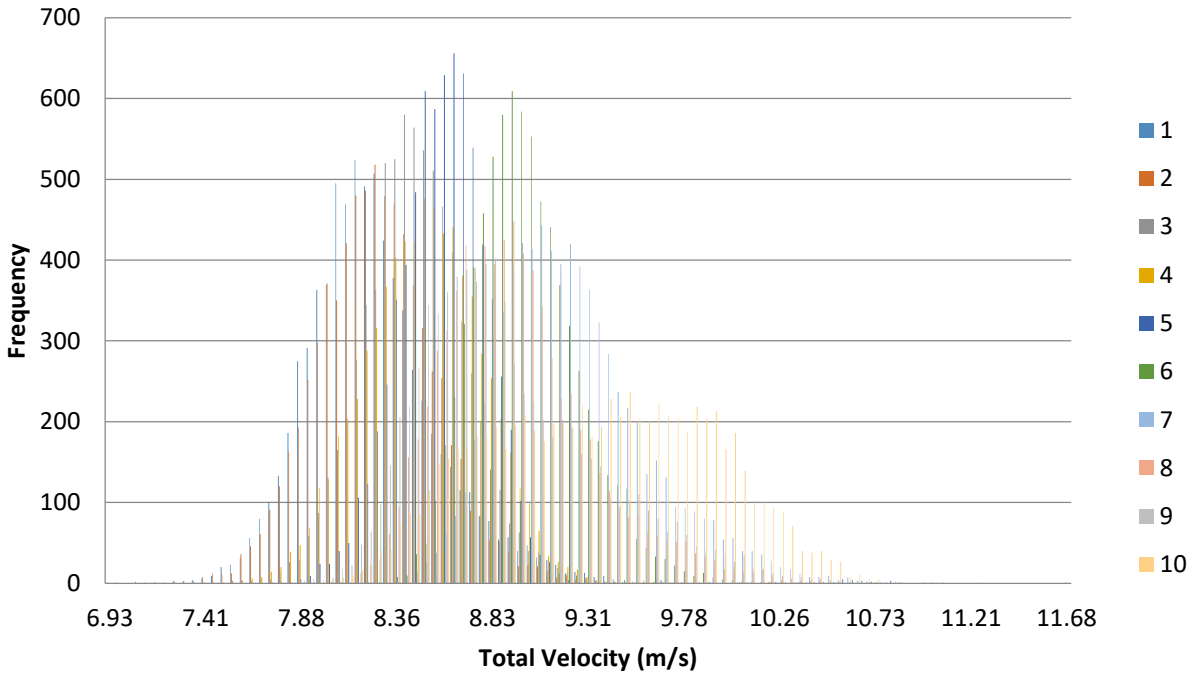


Figure 1. Velocity histogram for each interval (100 bins).

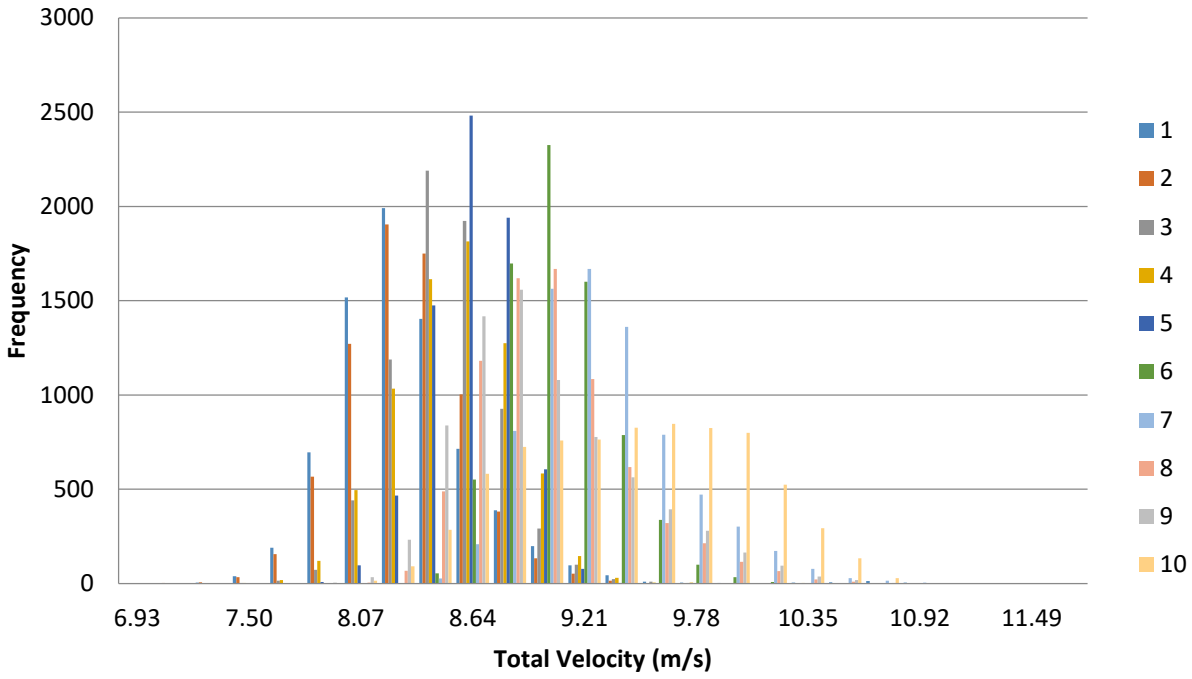
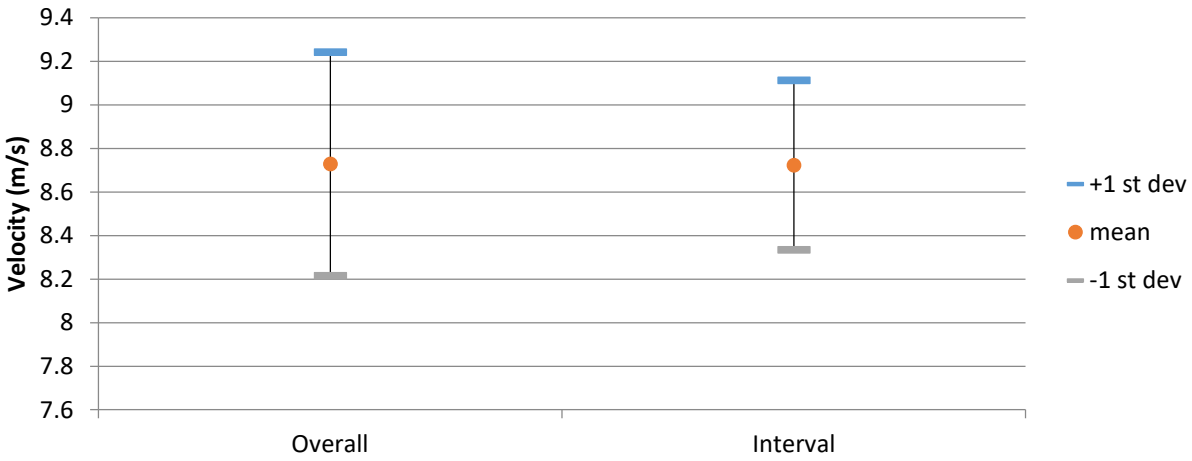
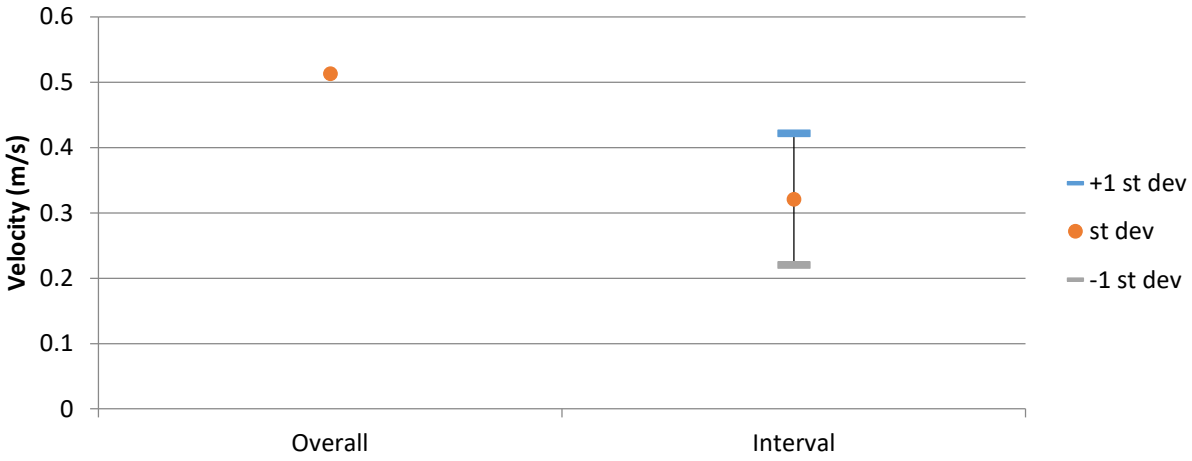


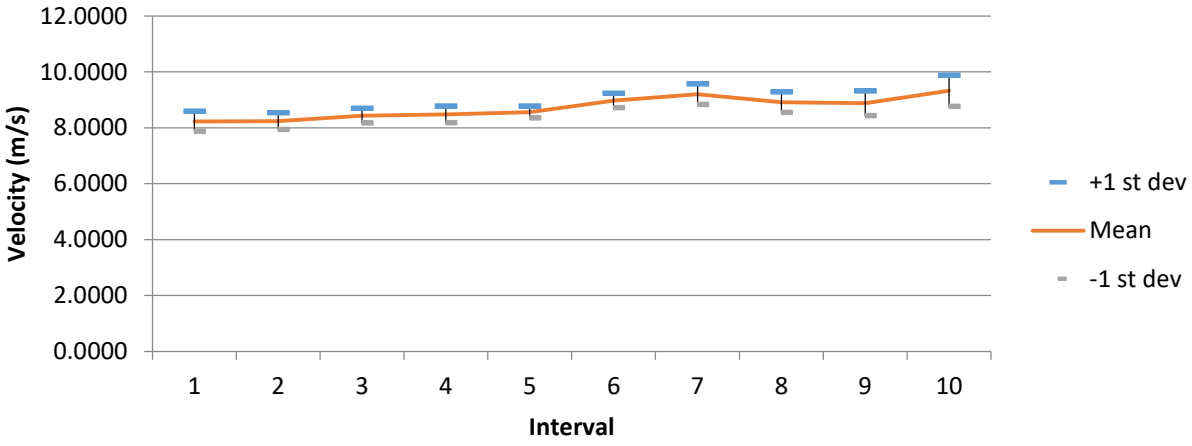
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 9
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: A4
First Sample Date: 09-Aug-13
First Sample Time: 08:55:12.828

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.8136	6.2742	8.4965	0.5998
u	7.9600	4.4700	6.2596	0.4413
v	-2.3800	-7.7200	-5.6632	0.7328
w	1.3600	-3.4600	-0.4229	0.6208

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	10.8136	8.7824	9.3425	0.2436	2.6079	733	5.86 %
2	10.3476	8.4729	9.0839	0.1970	2.1691	249	1.99 %
3	10.5061	8.1534	8.9021	0.3049	3.4247	50	0.40 %
4	9.2577	8.0205	8.4925	0.1569	1.8475	395	3.16 %
5	9.0084	7.6743	8.3096	0.1824	2.1945	37	0.30 %
6	9.9535	7.9659	8.5978	0.2776	3.2291	11	0.09 %
7	9.9811	6.2742	8.1949	0.4003	4.8844	52	0.42 %
8	9.6707	6.7595	7.9347	0.5346	6.7371	327	2.62 %
9	9.4578	6.3130	7.7177	0.5378	6.9682	0	0.00 %
10	10.1689	6.7901	8.4644	0.5276	6.2328	427	3.42 %
		Average	8.5040	0.3363	4.0295		
		St dev	0.4779	0.1445	1.9018		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	6.4909	-6.6876	-0.5586	0.1993	0.2307	0.2816	3.0699	3.5543	4.3380
2	6.5009	-6.3233	-0.2041	0.2667	0.2920	0.3349	4.1029	4.4912	5.1521
3	6.4548	-6.1106	-0.0886	0.2722	0.2902	0.4135	4.2165	4.4955	6.4064
4	6.0418	-5.9534	0.1619	0.2688	0.1539	0.2805	4.4495	2.5478	4.6422
5	6.0901	-5.6386	0.0437	0.3035	0.1749	0.2730	4.9837	2.8723	4.4825
6	6.2201	-5.8789	-0.7359	0.2664	0.2215	0.2931	4.2823	3.5616	4.7116
7	6.0237	-5.4981	-0.4647	0.3941	0.3037	0.5824	6.5426	5.0418	9.6678
8	5.9574	-5.1453	-0.6378	0.5263	0.3989	0.6623	8.8341	6.6961	11.1173
9	6.2658	-4.3709	-0.6286	0.5450	0.5466	0.7039	8.6976	8.7228	11.2337
10	6.5727	-5.1103	-1.1378	0.5734	0.6612	0.7413	8.7248	10.0597	11.2790

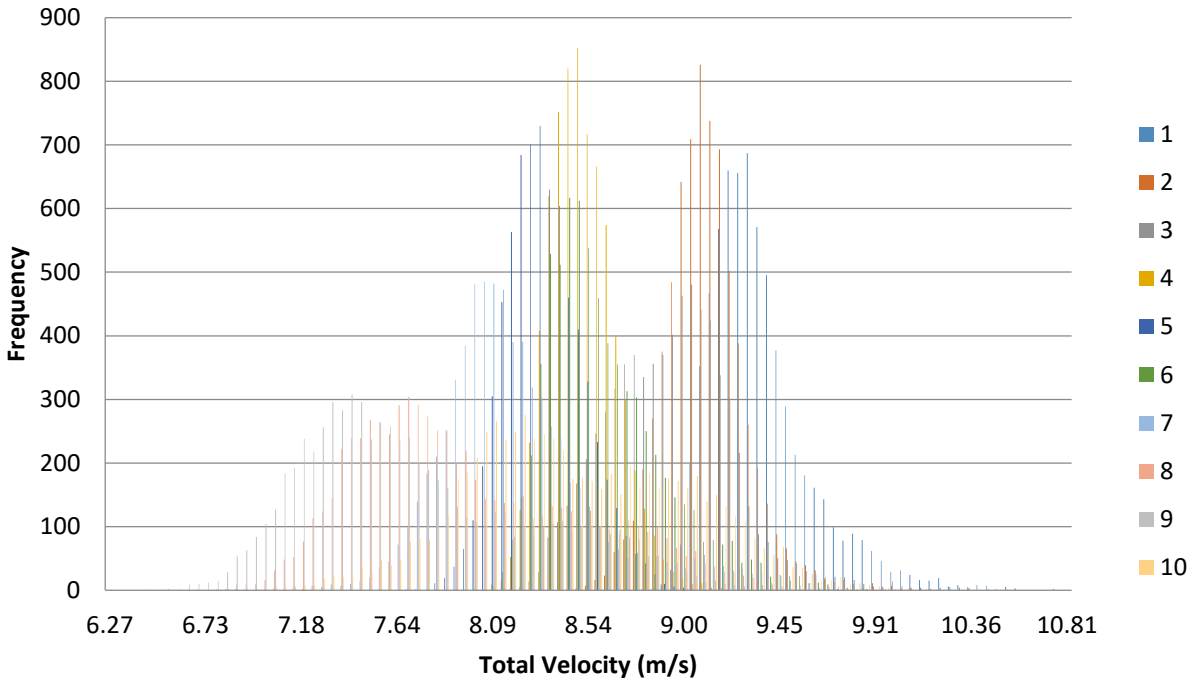


Figure 1. Velocity histogram for each interval (100 bins).

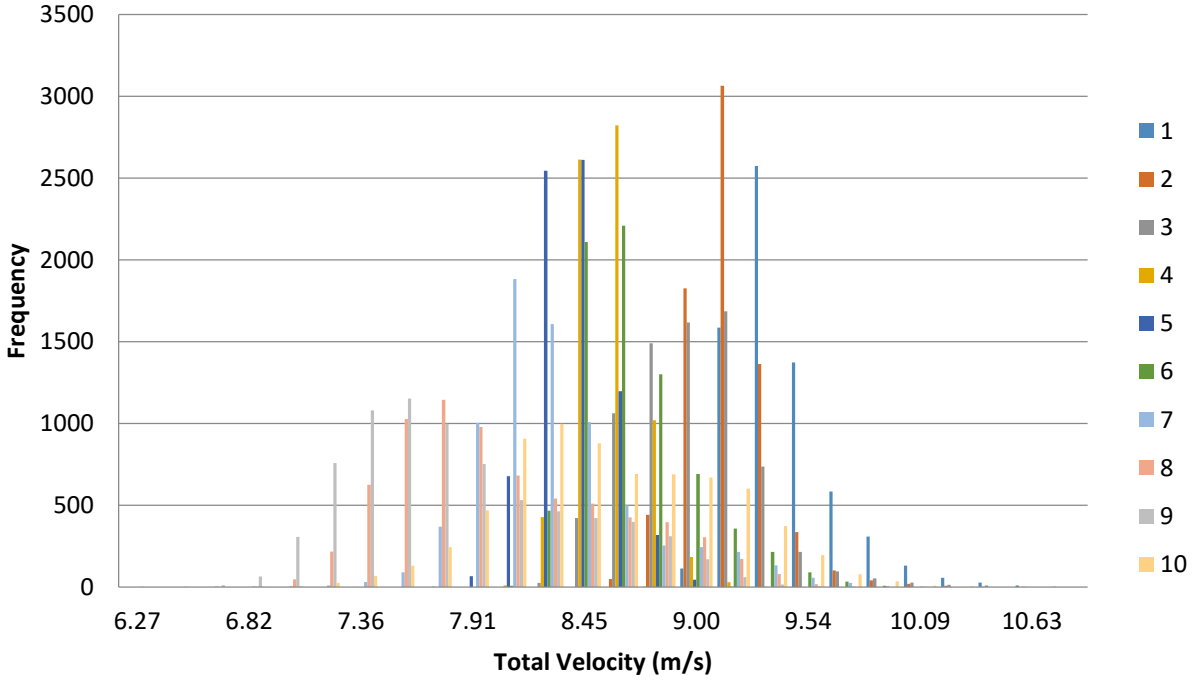
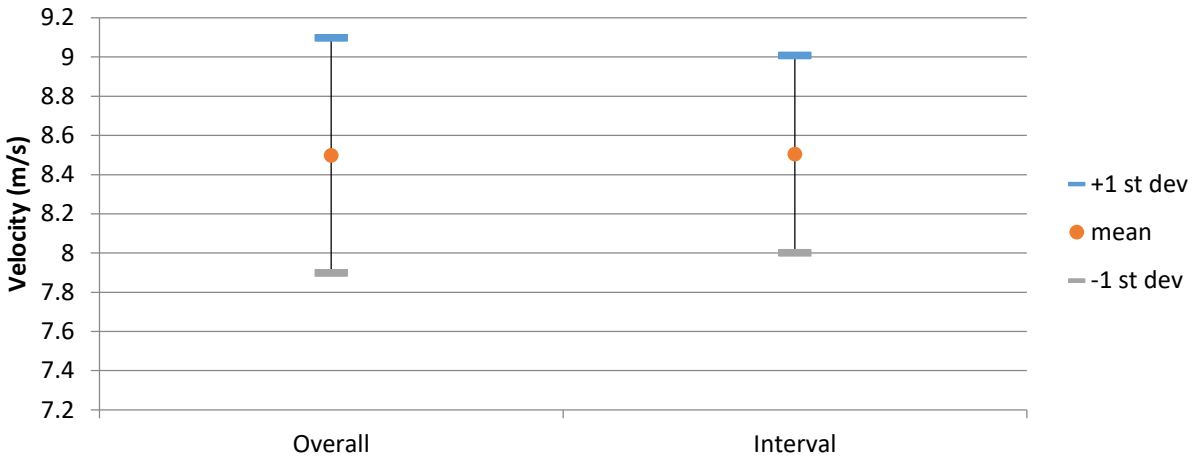
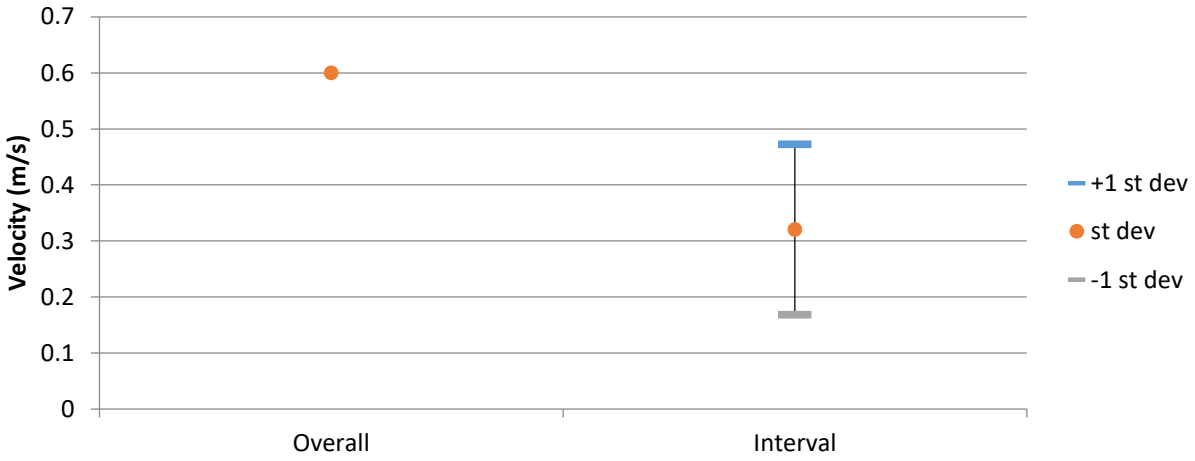


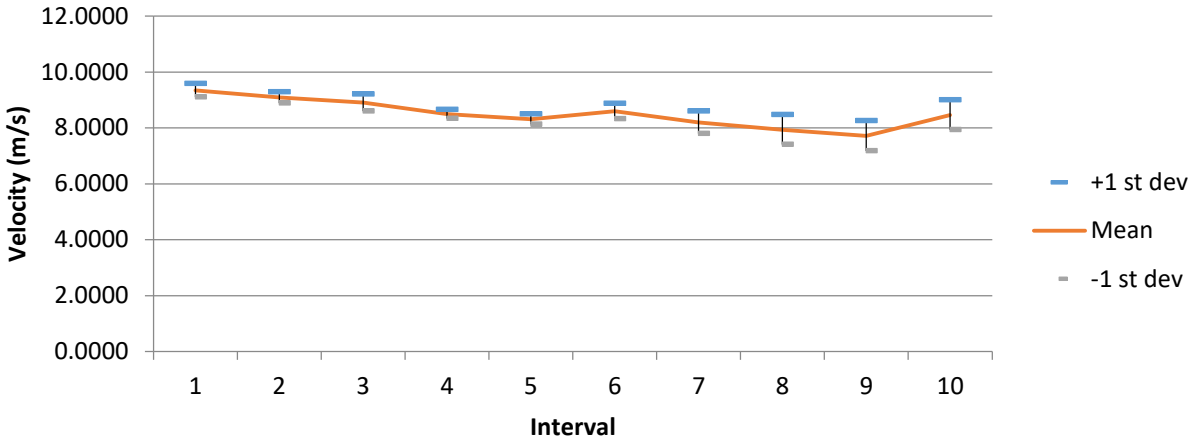
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 10
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: A5
First Sample Date: 09-Aug-13
First Sample Time: 08:56:51.937

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.7075	8.0434	8.9271	0.1766
u	7.6500	5.5900	6.2125	0.2117
v	-4.9300	-7.3300	-6.3958	0.2699
w	1.9600	-2.0000	0.1229	0.3011

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	9.3546	8.3904	8.8305	0.1259	1.4263	315	2.52 %
2	9.4628	8.3327	8.8835	0.1274	1.4344	604	4.83 %
3	10.7075	8.0434	8.8781	0.2615	2.9450	1651	13.21 %
4	9.4101	8.1269	8.8759	0.1770	1.9942	110	0.88 %
5	9.8953	8.6615	9.0767	0.1100	1.2122	416	3.33 %
6	9.5200	8.6747	9.1340	0.1071	1.1720	1906	15.25 %
7	9.4394	8.5631	8.9844	0.0990	1.1020	1401	11.21 %
8	9.2896	8.6175	8.9873	0.0953	1.0601	4287	34.30 %
9	9.6601	8.4250	8.8036	0.1143	1.2983	1880	15.04 %
10	9.2676	8.5136	8.8548	0.1033	1.1669	1891	15.13 %
		Average	8.9309	0.1321	1.4811		
		St dev	0.1043	0.0485	0.5507		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	6.1220	-6.3591	-0.0134	0.1560	0.1438	0.1749	2.5480	2.3483	2.8563
2	6.1654	-6.3905	0.0600	0.1503	0.1624	0.1702	2.4378	2.6338	2.7603
3	6.3245	-6.1771	0.4147	0.2647	0.4421	0.5440	4.1855	6.9899	8.6021
4	6.3608	-6.1573	0.3509	0.2767	0.3677	0.3256	4.3506	5.7814	5.1188
5	6.3212	-6.5081	0.0746	0.1511	0.1537	0.1820	2.3905	2.4323	2.8792
6	6.2998	-6.6047	0.2103	0.1591	0.1804	0.1723	2.5256	2.8629	2.7352
7	6.2325	-6.4627	0.0662	0.1617	0.1522	0.2519	2.5942	2.4428	4.0422
8	6.1006	-6.5956	0.0943	0.0962	0.0970	0.1845	1.5769	1.5900	3.0240
9	6.0407	-6.4007	-0.0419	0.1143	0.1411	0.1481	1.8929	2.3364	2.4510
10	6.0638	-6.4492	-0.0128	0.1140	0.1254	0.1663	1.8803	2.0683	2.7425

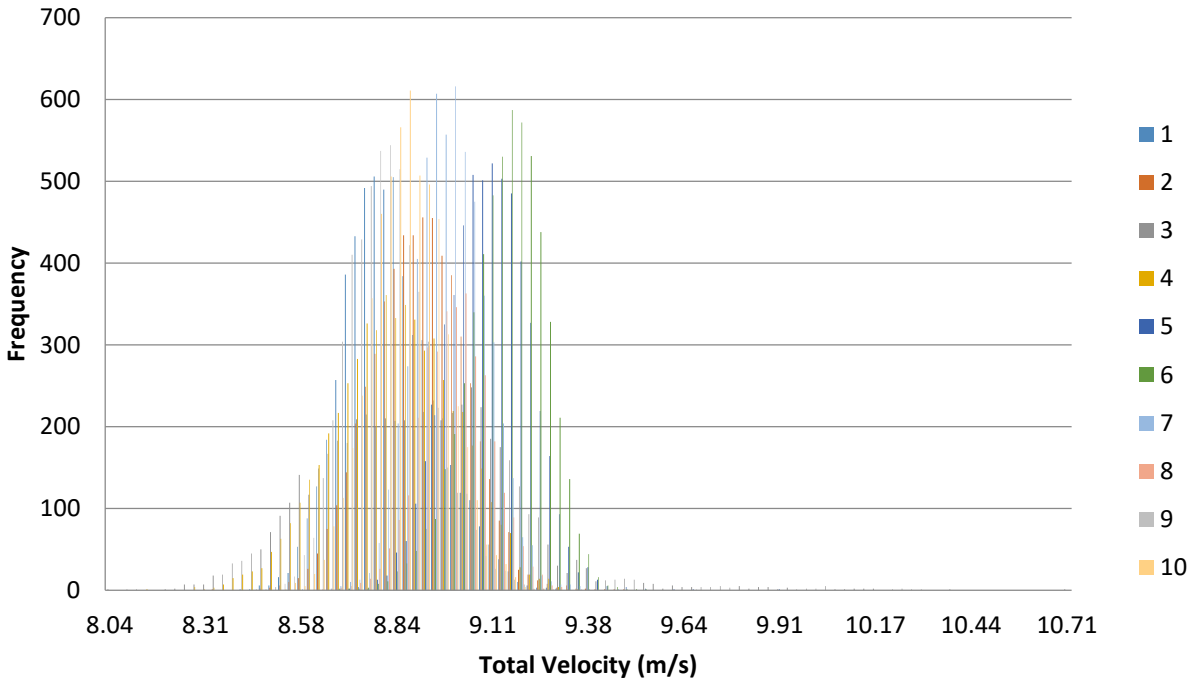


Figure 1. Velocity histogram for each interval (100 bins).

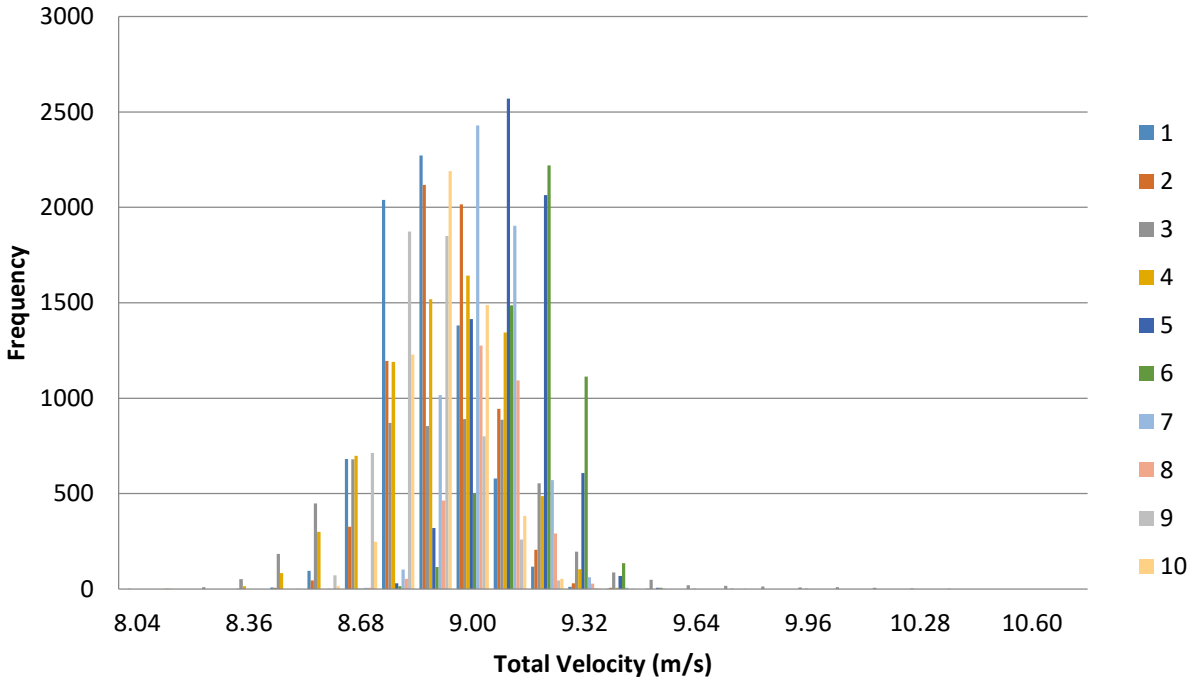
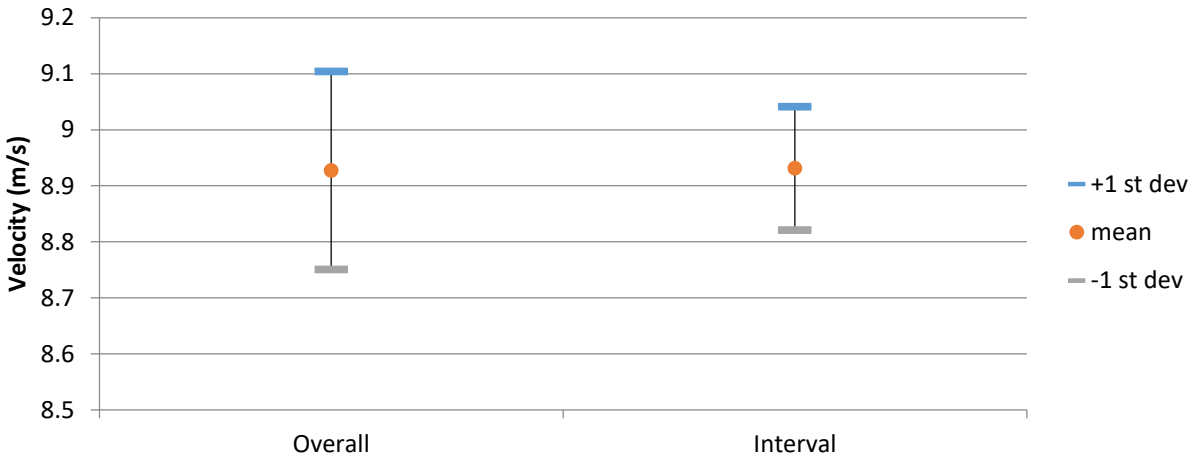
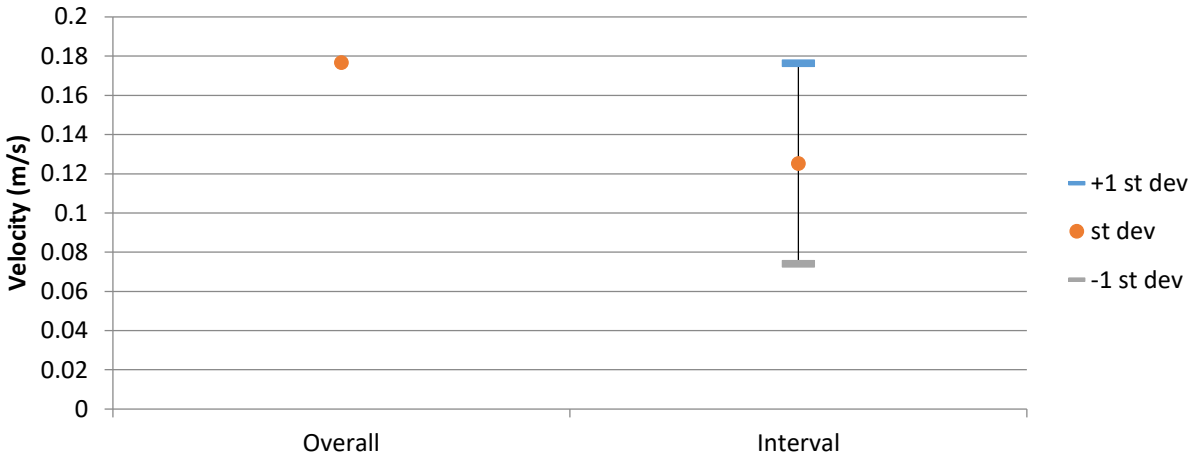


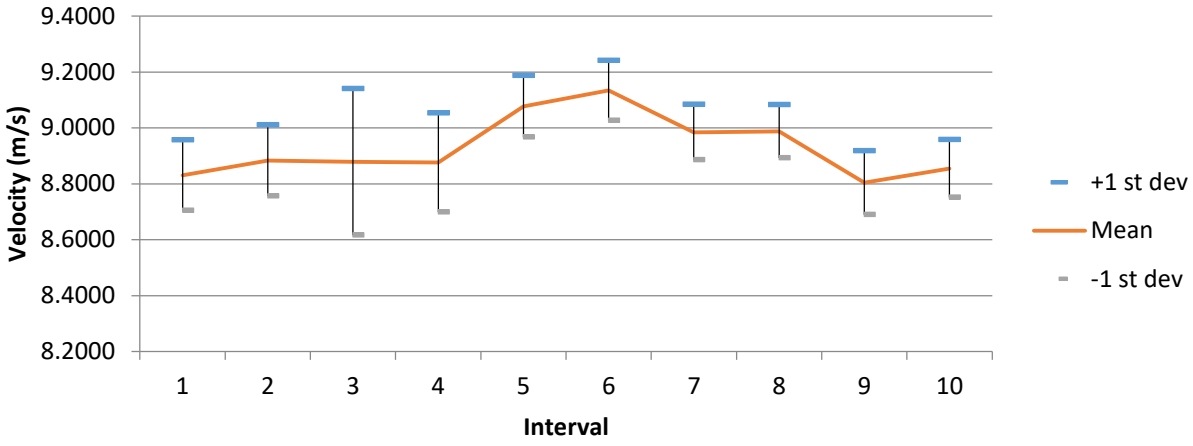
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 11
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: B5
First Sample Date: 09-Aug-13
First Sample Time: 09:00:10.859

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.2760	6.4897	8.3105	0.4312
u	9.8900	4.9700	7.3644	0.5392
v	0.0547	-7.1100	-3.5973	0.8834
w	4.9300	-3.8300	0.0881	0.9984

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	10.5396	6.7840	8.3674	0.4784	5.7171	3	0.02 %
2	10.2110	6.8901	8.3410	0.4735	5.6767	0	0.00 %
3	10.4829	6.6938	8.2612	0.3684	4.4592	0	0.00 %
4	9.8338	6.5371	8.0608	0.2943	3.6513	0	0.00 %
5	9.2043	6.8924	8.0972	0.2715	3.3534	0	0.00 %
6	8.9957	7.1486	7.9698	0.2307	2.8952	0	0.00 %
7	9.7257	6.6845	8.3884	0.3569	4.2546	0	0.00 %
8	10.7422	6.4897	8.5495	0.4085	4.7775	0	0.00 %
9	10.2199	6.9137	8.4242	0.3174	3.7683	0	0.00 %
10	11.2760	6.5142	8.6460	0.4926	5.6969	1	0.01 %
		Average	8.3105	0.3692	4.4250		
		St dev	0.2048	0.0876	0.9761		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	6.8131	-4.7622	-0.1925	0.4534	0.6047	0.7338	6.6553	8.8756	10.7702
2	7.4388	-3.5104	-0.0117	0.4624	0.6710	1.2134	6.2166	9.0208	16.3118
3	7.4062	-3.3537	0.6396	0.4244	0.8250	1.0071	5.7300	11.1394	13.5980
4	6.9716	-3.9033	0.5187	0.4917	0.6804	0.5008	7.0532	9.7592	7.1828
5	6.9940	-3.9864	-0.0147	0.3401	0.5231	0.6651	4.8622	7.4795	9.5097
6	7.2955	-3.1064	-0.0383	0.2817	0.3990	0.6757	3.8607	5.4697	9.2625
7	7.8874	-2.6195	0.1953	0.3357	0.8003	0.7926	4.2565	10.1463	10.0494
8	7.8018	-3.2251	0.1095	0.4285	0.8318	1.0514	5.4919	10.6613	13.4763
9	7.4739	-3.7000	0.6878	0.4348	0.5667	0.7316	5.8177	7.5821	9.7888
10	7.5623	-3.8056	-1.0130	0.5121	0.8375	1.1556	6.7713	11.0747	15.2816

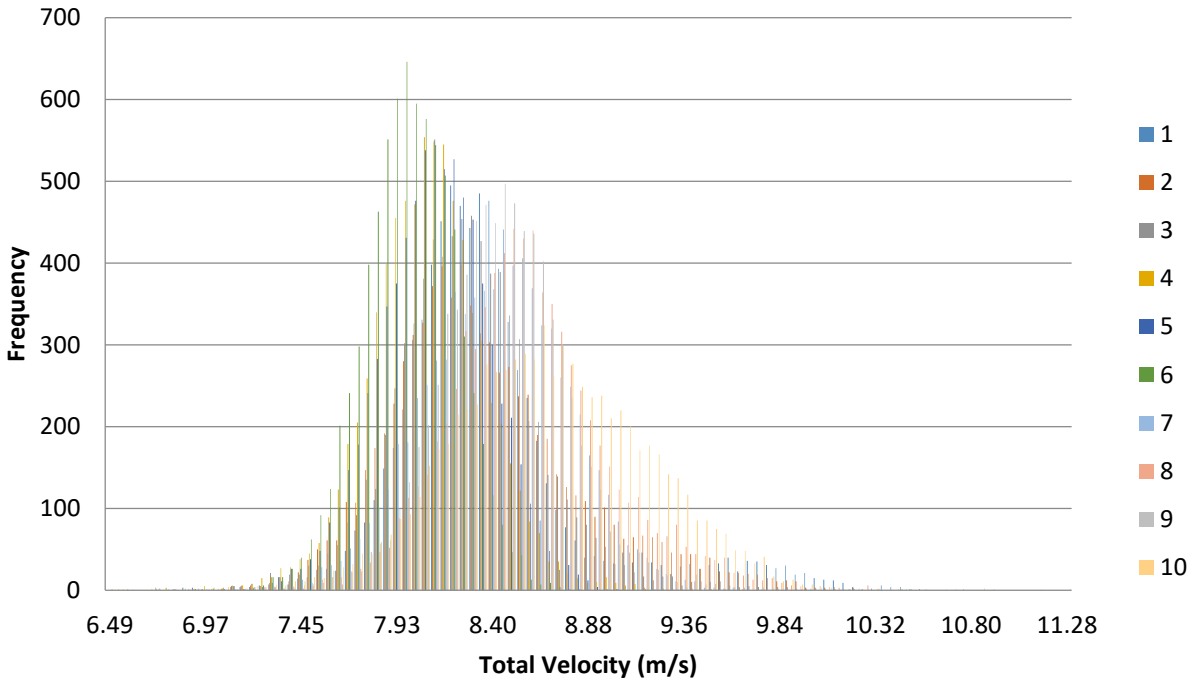


Figure 1. Velocity histogram for each interval (100 bins).

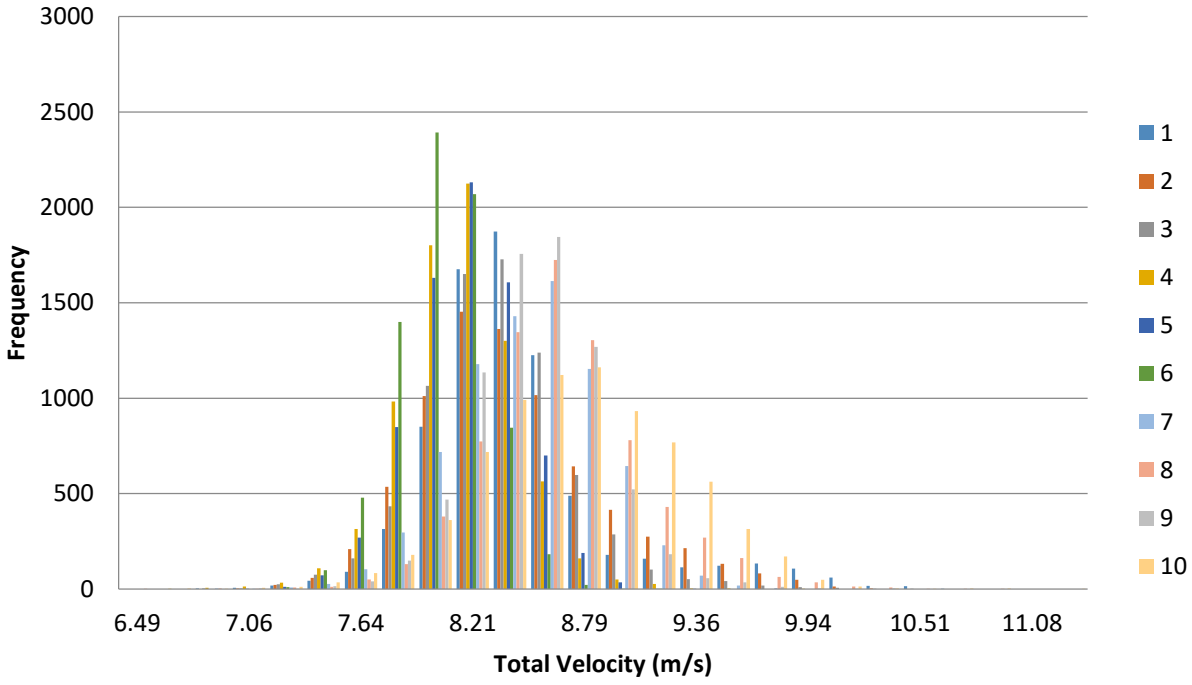
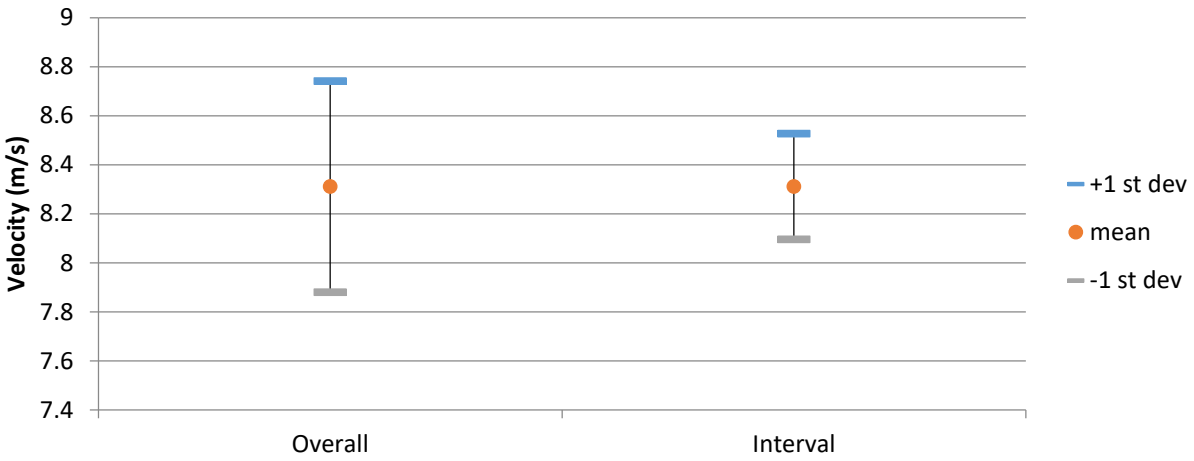
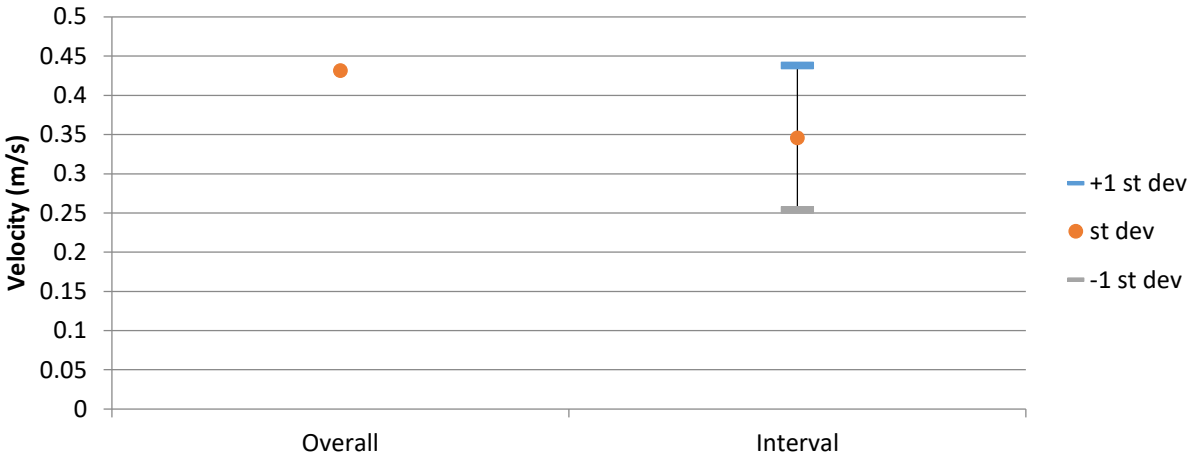


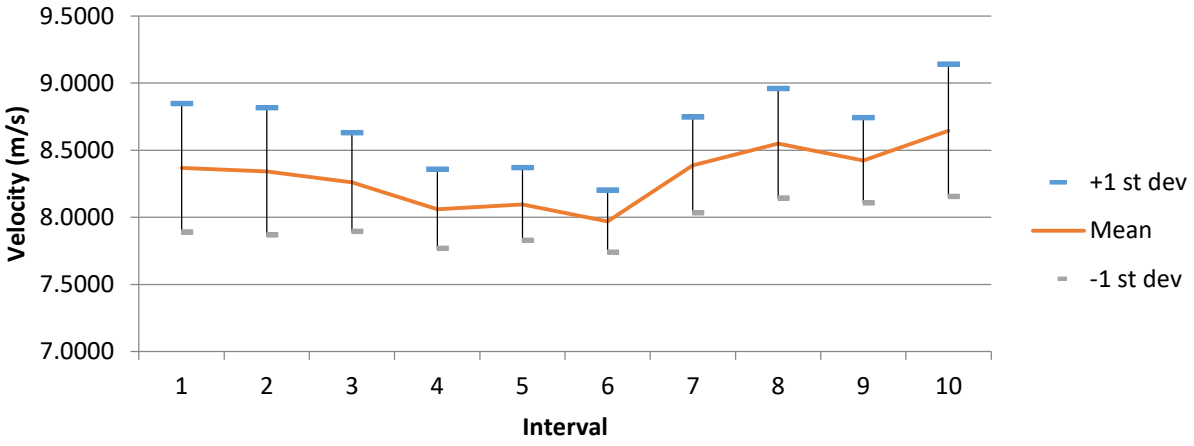
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 12
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: B4
First Sample Date: 09-Aug-13
First Sample Time: 09:01:48.765

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.5886	6.3328	8.6581	0.5007
u	10.6000	5.1200	7.6086	0.5524
v	1.5000	-7.4000	-3.8130	0.9541
w	5.2100	-4.3200	-0.1672	1.2408

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	10.3975	6.8626	8.6997	0.5171	4.0390
2	9.5588	7.1605	8.4330	0.3406	4.5220
3	10.2815	7.0770	8.3794	0.3789	3.9103
4	9.5891	7.0656	8.4691	0.3312	4.0481
5	10.2185	7.5703	8.7853	0.3556	5.4853
6	11.5886	7.4727	8.9899	0.4931	6.6802
7	11.2650	7.0571	8.9450	0.5975	5.9749
8	11.2927	6.5893	8.8600	0.5294	5.1475
9	10.5324	6.3328	8.4075	0.4328	5.1393
10	10.7117	6.4691	8.6119	0.4426	5.1038
		Average	8.6581	0.4419	5.0050
		St Dev	0.2310	0.0908	0.8548

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	7.5280	-4.0936	-0.3230	0.5343	0.8210	1.2084	7.0971	10.9061	16.0519
2	7.6674	-3.3510	0.3799	0.4114	0.5413	0.7782	5.3655	7.0599	10.1490
3	7.3966	-3.8417	-0.0011	0.4484	0.4795	0.6775	6.0620	6.4824	9.1597
4	7.3757	-4.1128	-0.1262	0.3808	0.3242	0.5035	5.1625	4.3949	6.8262
5	7.6084	-4.2768	-0.6306	0.3813	0.3374	0.6880	5.0116	4.4348	9.0420
6	7.7141	-4.2952	-1.4197	0.4155	0.6317	0.7199	5.3860	8.1889	9.3316
7	7.7915	-3.9114	-0.4209	0.6160	0.7423	1.8046	7.9055	9.5270	23.1610
8	7.2744	-4.7979	-0.6990	0.6214	0.7538	1.1829	8.5417	10.3630	16.2605
9	7.6566	-3.1397	0.4938	0.6021	0.8179	1.0561	7.8642	10.6829	13.7937
10	8.0735	-2.3097	1.0746	0.5664	0.9881	1.1807	7.0159	12.2387	14.6250

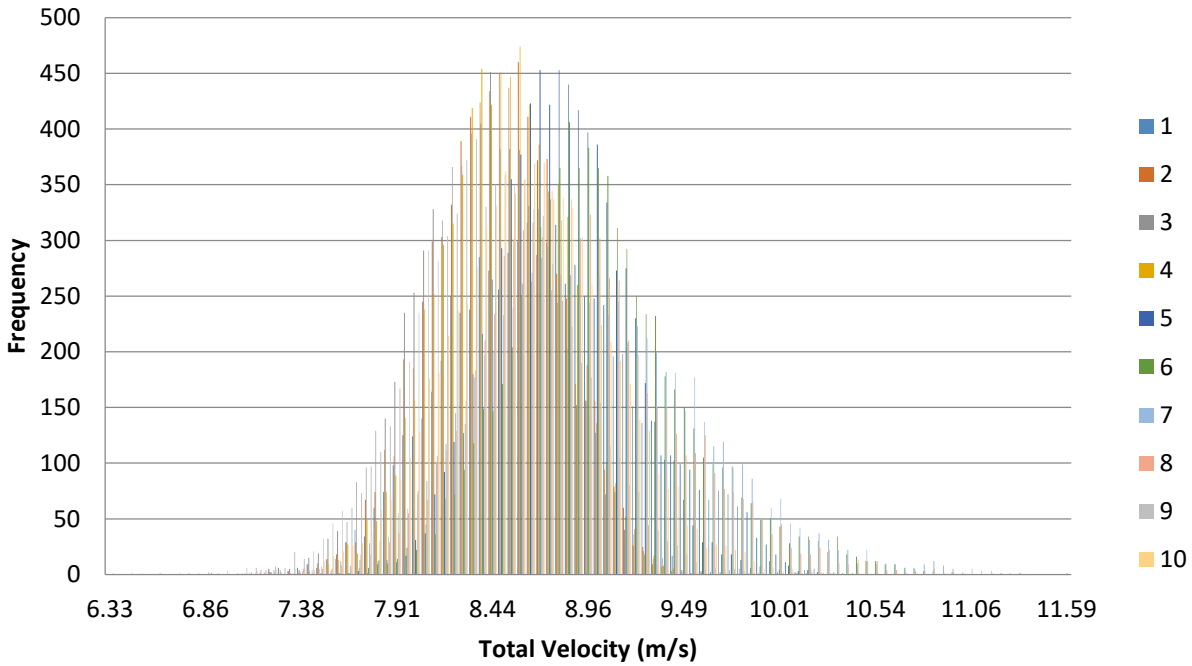


Figure 1. Velocity histogram for each interval (100 bins).

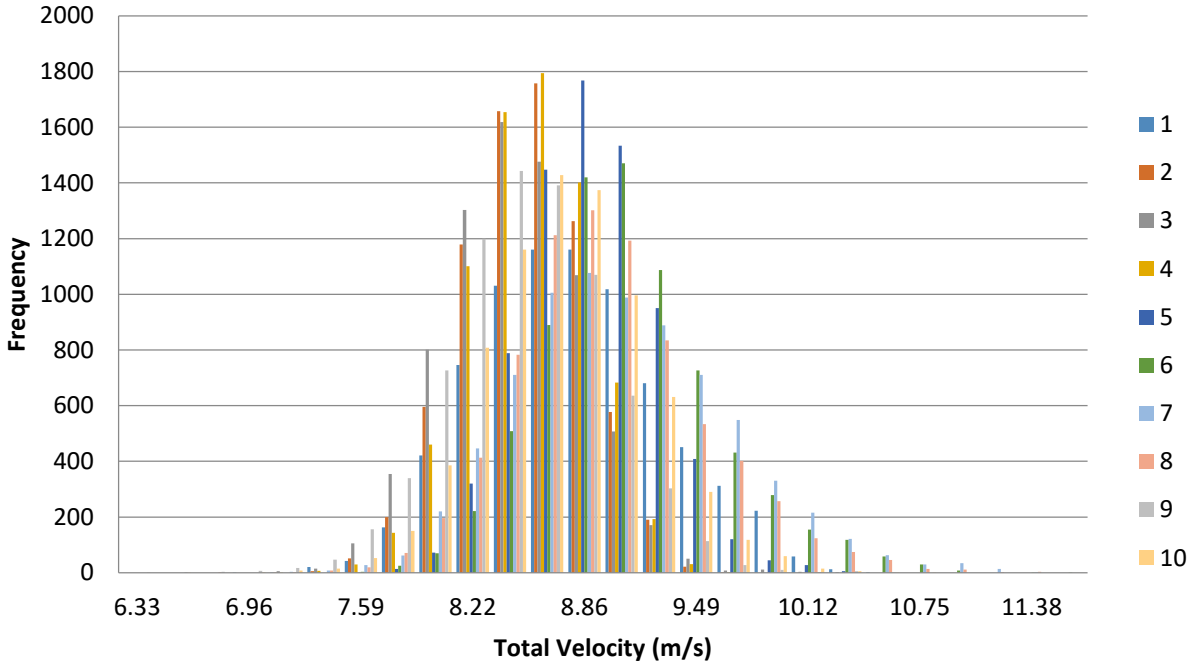
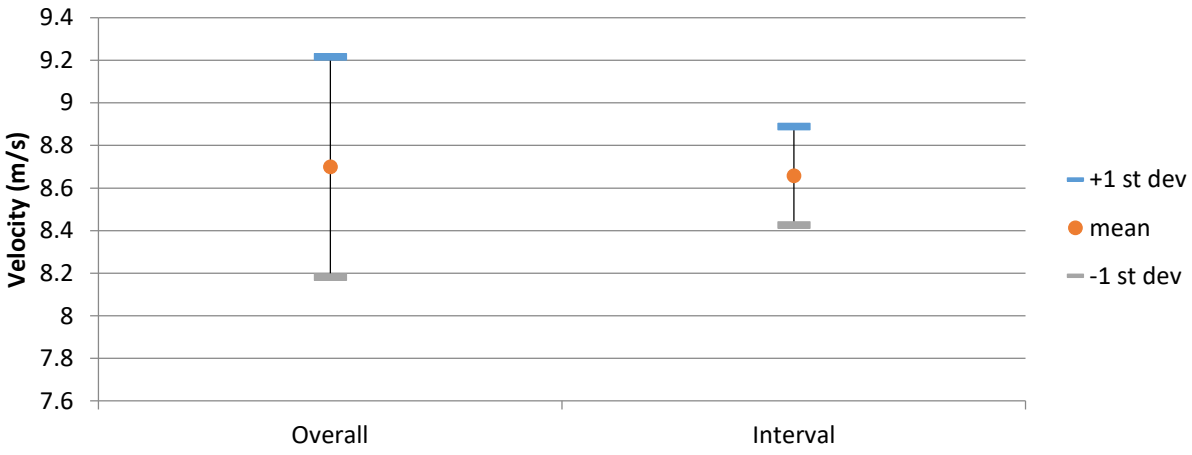
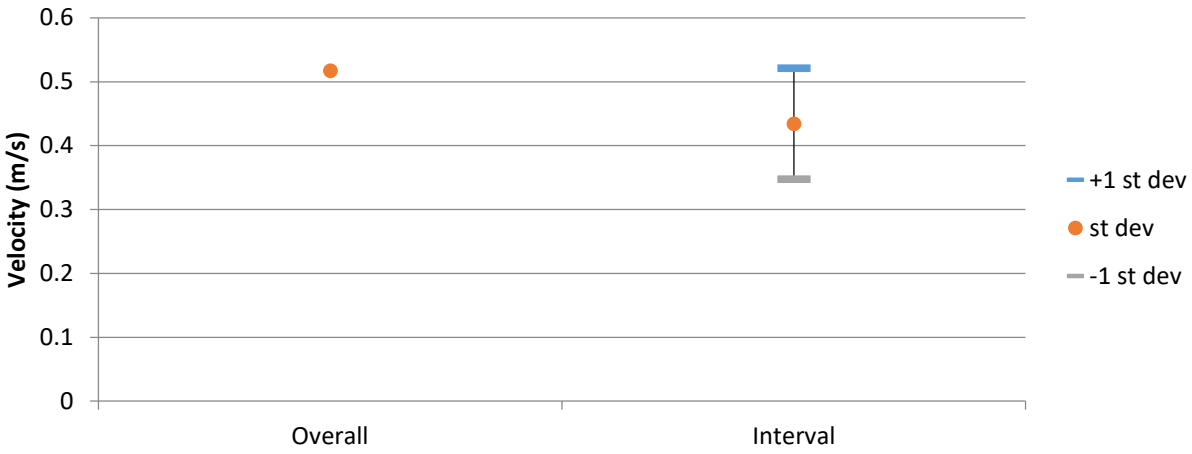


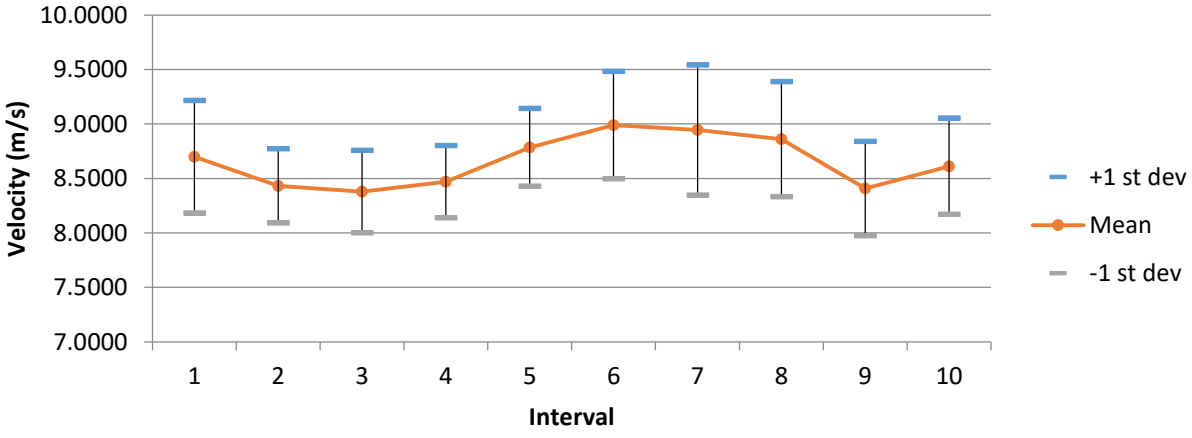
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 13
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: B3
First Sample Date: 09-Aug-13
First Sample Time: 09:03:14.281

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.4969	7.5261	9.4965	0.5666
u	9.3100	5.6200	7.6139	0.6061
v	-2.9000	-7.9500	-5.4020	0.6020
w	3.0100	-3.6300	-1.1618	1.1274

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	11.4593	7.9604	9.2375	0.5098	5.5193	0	0.00 %
2	11.4691	7.5261	9.1432	0.4248	4.6457	202	1.62 %
3	10.3159	8.1336	9.2301	0.2394	2.5938	2	0.02 %
4	11.3722	8.0611	9.2356	0.4157	4.5013	29	0.23 %
5	11.2091	8.1936	9.6994	0.5021	5.1765	0	0.00 %
6	11.2361	7.7998	9.3195	0.4771	5.1198	0	0.00 %
7	10.8073	8.2438	9.4928	0.4601	4.8470	0	0.00 %
8	11.3963	8.2228	10.2085	0.4833	4.7342	0	0.00 %
9	11.4969	7.8308	9.8175	0.6208	6.3233	0	0.00 %
10	11.3231	8.4329	9.5706	0.4578	4.7834	0	0.00 %
		Average	9.4955	0.4591	4.8244		
		St dev	0.3192	0.0910	0.8980		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	7.4457	-5.3085	-1.0838	0.5532	0.4730	0.5170	7.4304	6.3527	6.9439
2	7.1321	-5.5752	0.1537	0.6516	0.7177	0.9301	9.1356	10.0633	13.0407
3	7.2391	-5.6034	0.7621	0.4490	0.4804	0.6600	6.2018	6.6357	9.1171
4	7.1582	-5.7470	-0.6006	0.5064	0.5491	0.5311	7.0739	7.6710	7.4194
5	7.6829	-5.6240	-1.7219	0.4907	0.3733	0.5732	6.3863	4.8584	7.4608
6	7.7570	-4.9115	-1.4757	0.3298	0.4939	0.5065	4.2512	6.3678	6.5294
7	8.0565	-4.7415	-1.5637	0.2759	0.4986	0.4095	3.4248	6.1891	5.0824
8	8.0757	-5.8299	-2.1901	0.4478	0.3614	0.3378	5.5449	4.4754	4.1829
9	7.6688	-5.5440	-2.5452	0.6891	0.4511	0.2566	8.9864	5.8824	3.3466
10	7.9088	-5.1412	-1.3150	0.5100	0.4425	0.7996	6.4480	5.5948	10.1107

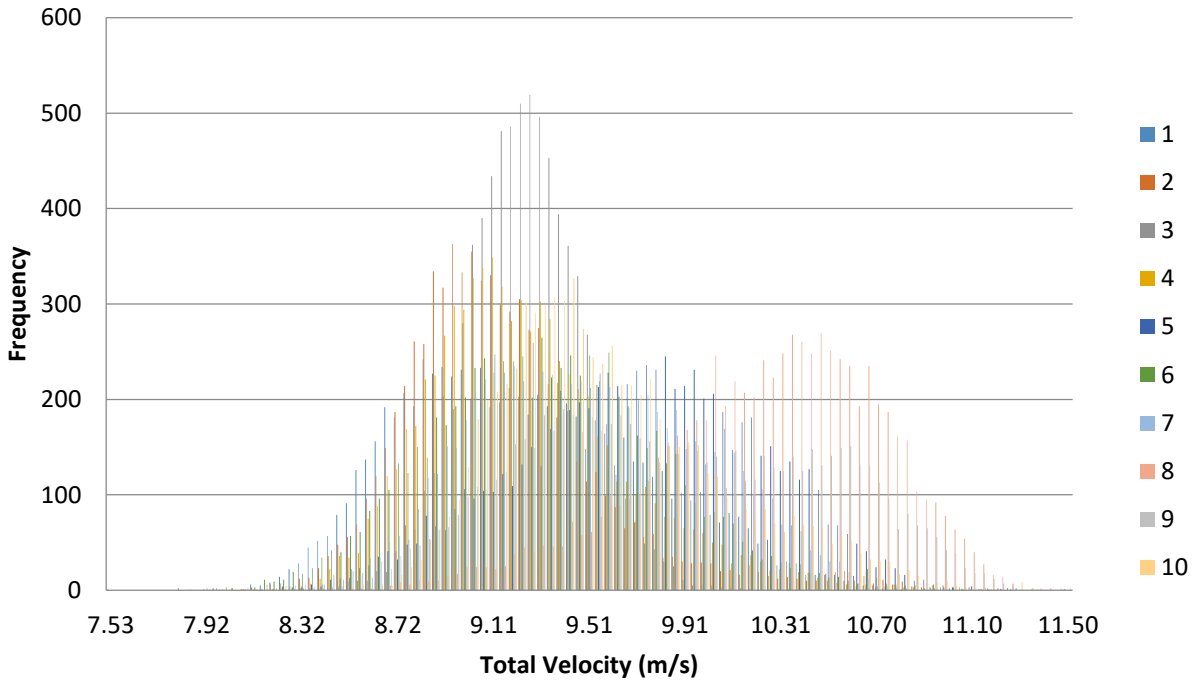


Figure 1. Velocity histogram for each interval (100 bins).

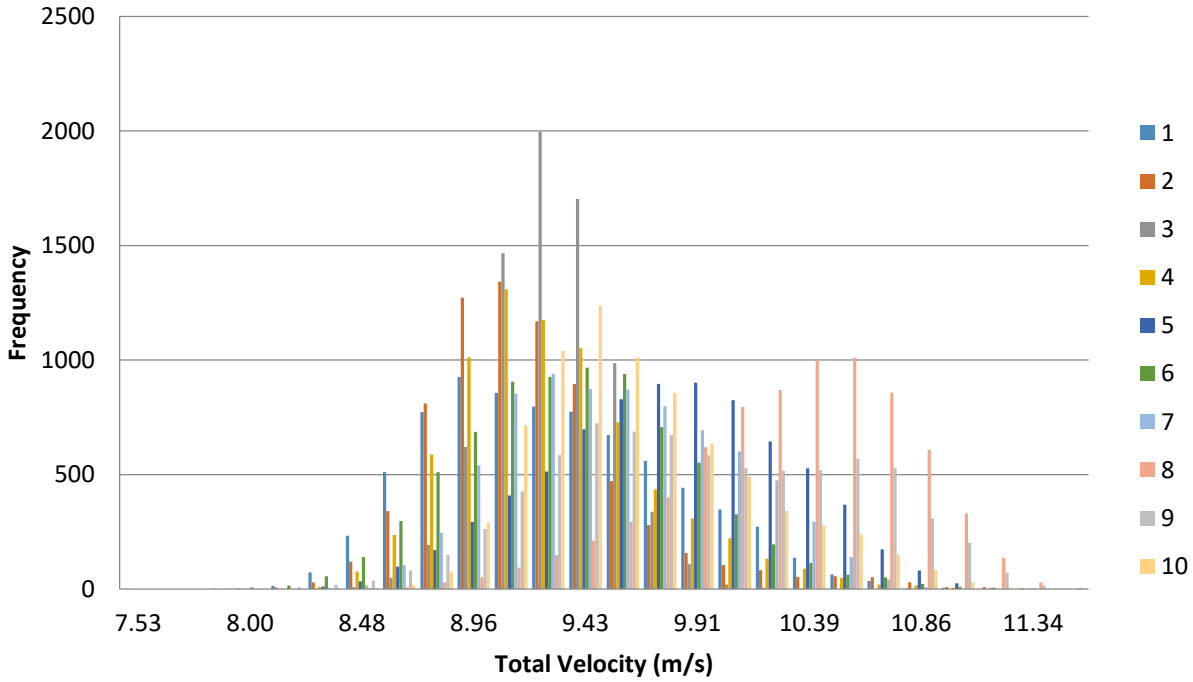
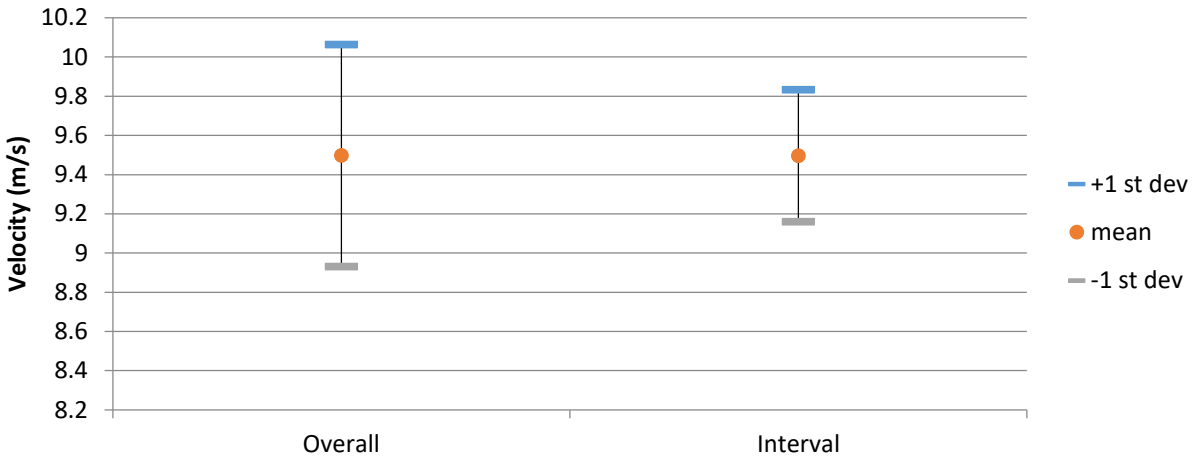
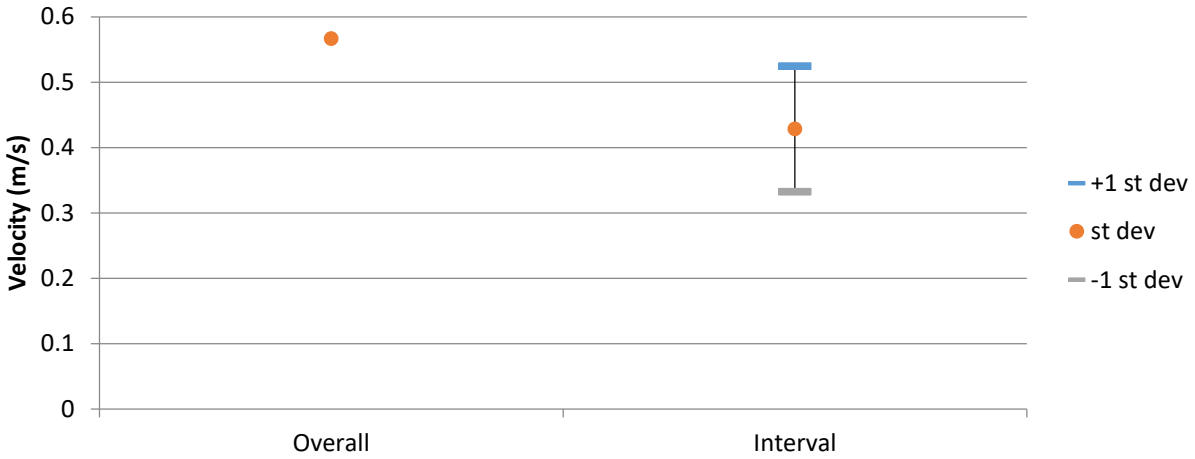


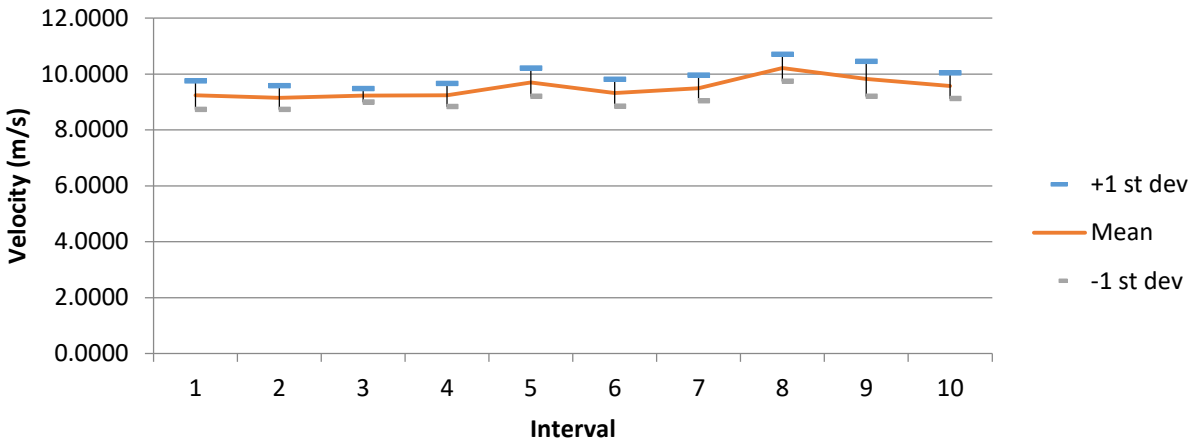
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 14
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: C3
First Sample Date: 09-Aug-13
First Sample Time: 09:06:40.765

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.8686	7.2242	9.8183	0.3917
u	10.6000	6.1000	8.7236	0.4656
v	-0.3390	-7.6400	-3.6799	0.8231
w	1.5700	-6.7900	-2.2172	1.0477

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	12.8686	8.2853	10.1338	0.4887	4.8221	3	0.02 %
2	11.5164	7.2242	9.7952	0.4206	4.2937	0	0.00 %
3	11.0509	8.5971	9.7642	0.2951	3.0221	0	0.00 %
4	11.8704	8.7294	9.9491	0.3404	3.4214	0	0.00 %
5	11.2723	8.4344	9.8295	0.3526	3.5867	0	0.00 %
6	10.9460	7.9690	9.6589	0.3738	3.8695	0	0.00 %
7	10.8873	8.9181	9.8599	0.2804	2.8442	0	0.00 %
8	10.9907	8.6174	9.6141	0.2637	2.7424	0	0.00 %
9	11.2200	8.7100	9.6629	0.3571	3.6955	0	0.00 %
10	11.5630	8.9154	9.9151	0.3919	3.9525	0	0.00 %
		Average	9.8183	0.3564	3.6250		
		St dev	0.1492	0.0645	0.6203		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.4309	-4.1597	-3.5709	0.6624	0.9460	0.6809	7.8572	11.2202	8.0762
2	8.8081	-3.3922	-2.1907	0.4739	0.8670	1.1218	5.3799	9.8437	12.7362
3	8.8449	-3.3197	-2.3090	0.2932	0.6660	0.5603	3.3150	7.5300	6.3343
4	8.7662	-3.7485	-2.5671	0.5663	0.8087	0.7991	6.4603	9.2248	9.1161
5	8.3150	-3.8321	-3.2985	0.6423	0.7051	1.0630	7.7242	8.4800	12.7847
6	8.8575	-3.4055	-1.5482	0.2550	0.8134	0.5088	2.8789	9.1832	5.7447
7	8.7710	-4.0509	-1.9333	0.2034	0.3508	0.2324	2.3193	3.9996	2.6502
8	8.8186	-3.2429	-1.8424	0.2830	0.7491	0.4239	3.2093	8.4940	4.8070
9	8.7323	-3.6371	-1.3764	0.3089	0.7920	1.1833	3.5370	9.0696	13.5510
10	8.8917	-4.0109	-1.5358	0.2658	0.7584	0.5550	2.9889	8.5289	6.2419

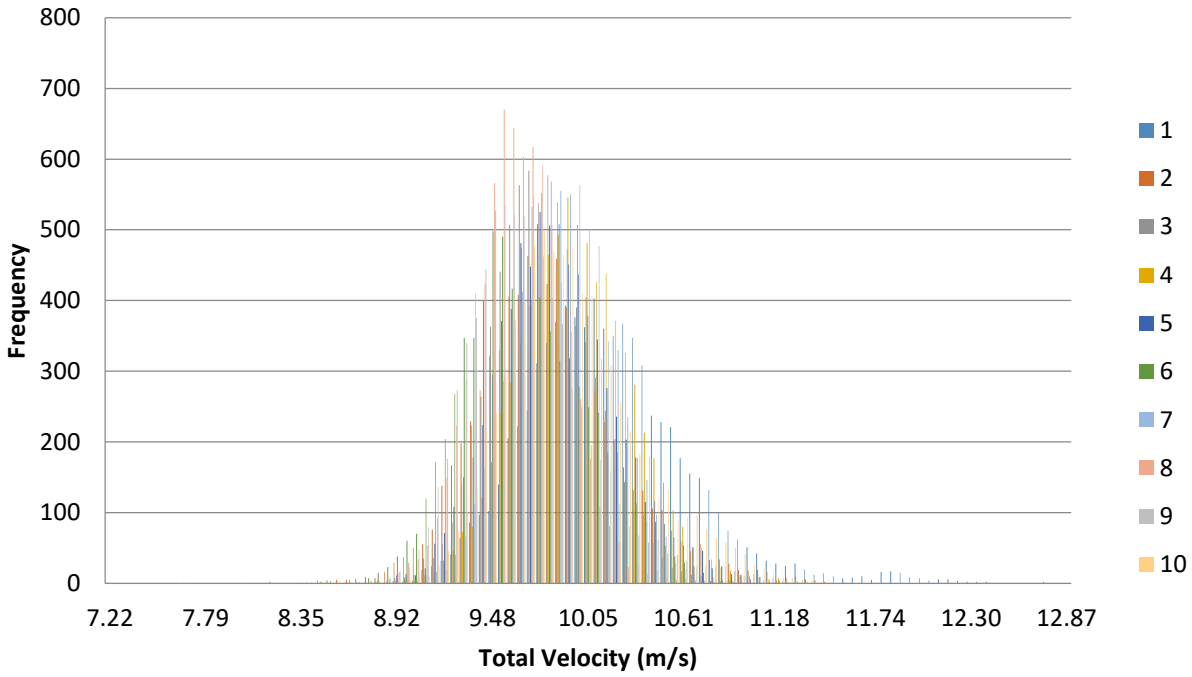


Figure 1. Velocity histogram for each interval (100 bins).

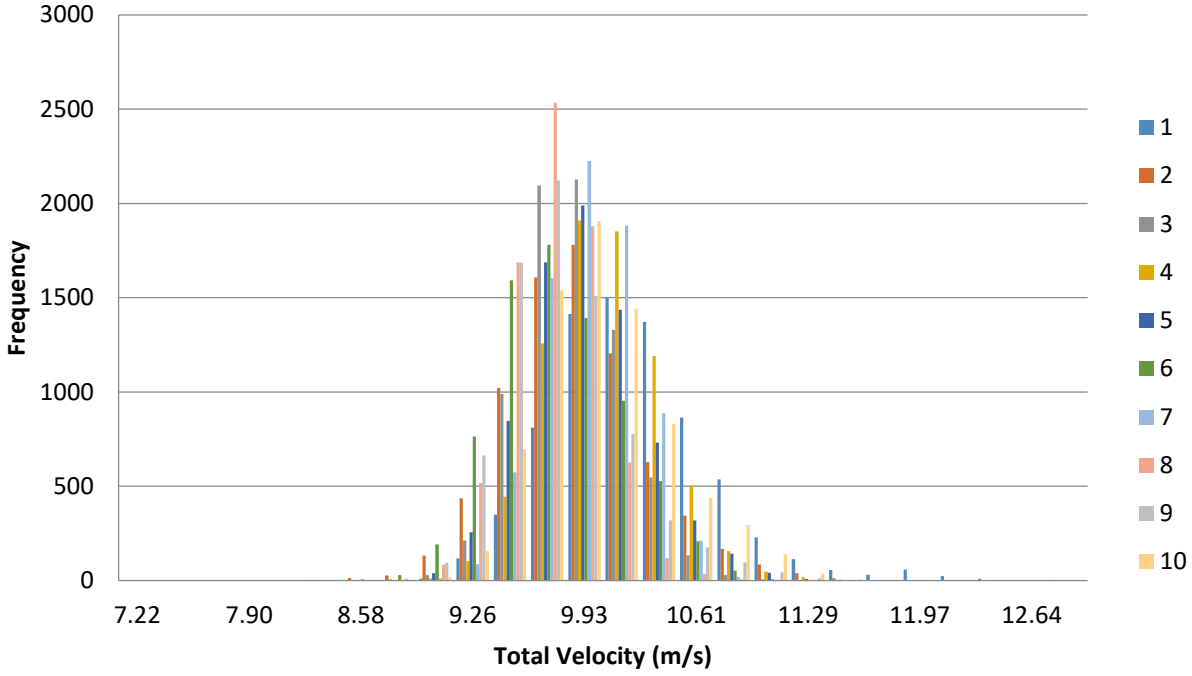
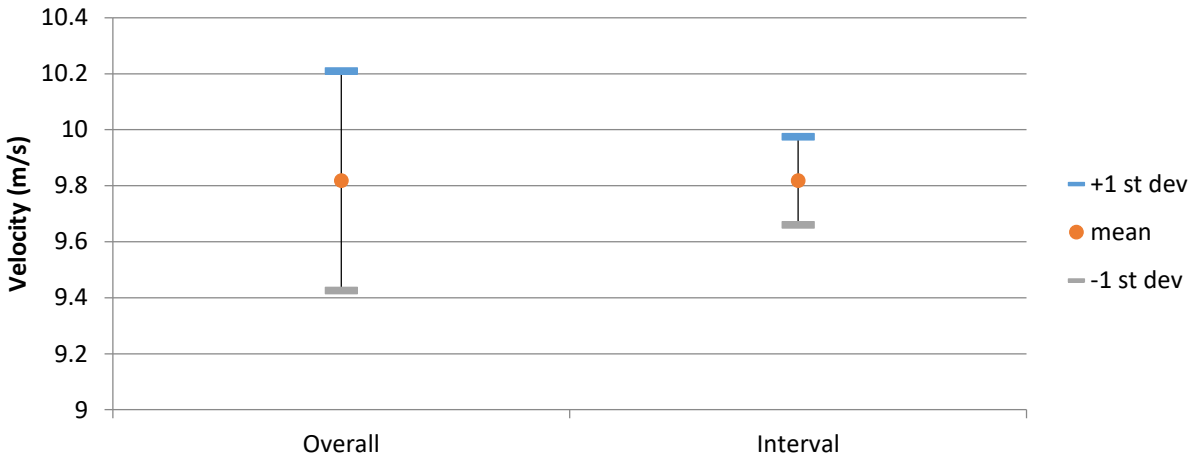
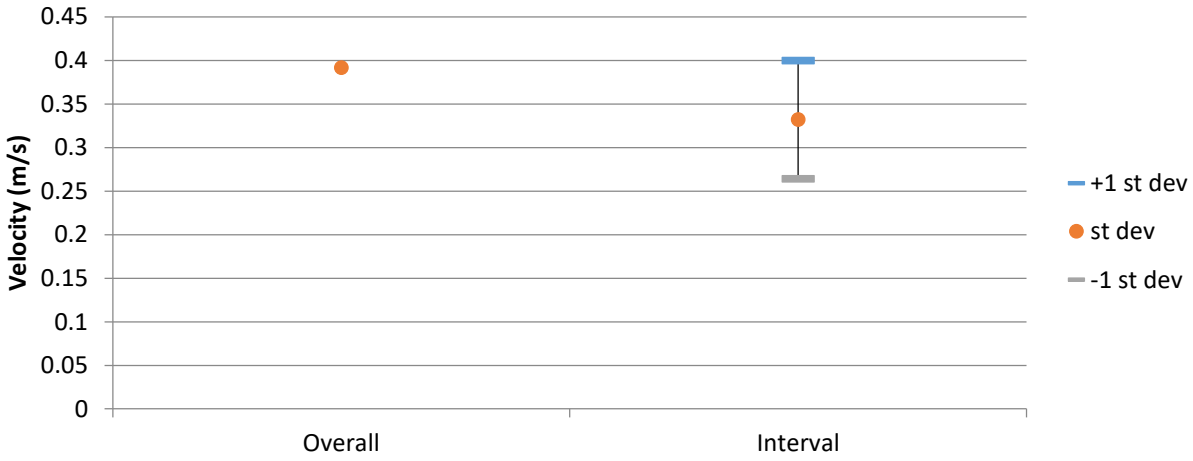


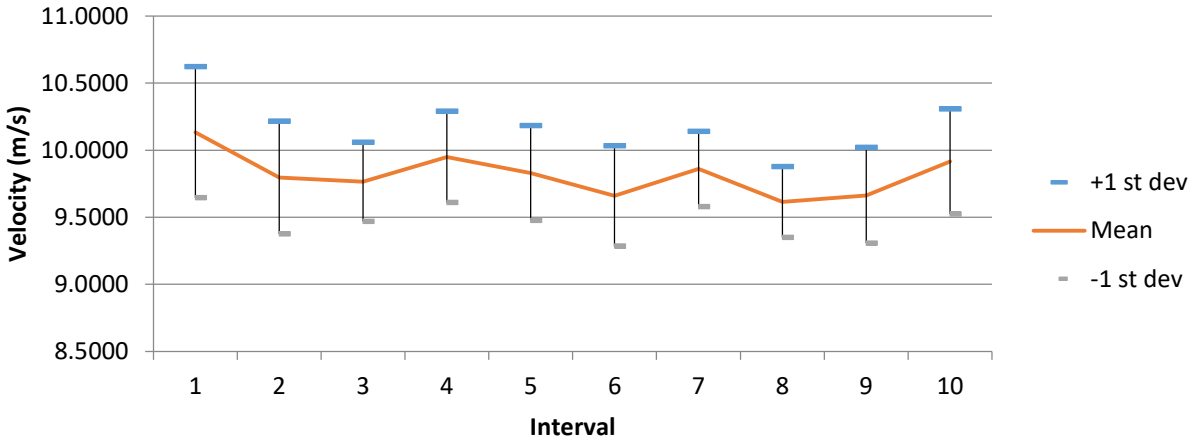
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 15
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: C4
First Sample Date: 09-Aug-13
First Sample Time: 09:08:12.812

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.1652	7.7070	9.3015	0.3864
u	10.8000	6.3700	8.4811	0.3603
v	-0.0617	-6.5100	-3.5658	0.8628
w	2.8800	-4.5900	-0.7190	0.7953

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	10.9114	7.7070	9.0558	0.3473	3.5172
2	10.3857	7.9081	9.0889	0.3197	4.0699
3	10.8115	7.8107	9.2477	0.3764	3.1863
4	10.2599	8.3282	9.2999	0.2963	3.0948
5	10.1635	8.1502	9.2002	0.2847	2.6664
6	10.2248	8.5123	9.4055	0.2508	3.2461
7	10.5083	8.0561	9.2966	0.3018	3.3427
8	11.5299	8.5980	9.6228	0.3217	4.3576
9	10.7857	8.0429	9.3587	0.4078	5.6161
10	12.1652	7.7785	9.4394	0.5301	3.6946
		Average	9.3015	0.3437	3.6792
		St Dev	0.1684	0.0797	0.7939

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.6366	-2.5779	0.0691	0.3658	0.5899	0.6363	4.2353	6.8299	7.3678
2	8.4326	-3.2624	-0.6526	0.3292	0.4438	0.4772	3.9040	5.2627	5.6588
3	8.4868	-3.4144	-0.3740	0.3803	0.7765	1.0444	4.4810	9.1496	12.3057
4	8.3966	-3.8950	-0.7130	0.2982	0.3683	0.4106	3.5514	4.3858	4.8898
5	8.4551	-3.5225	-0.7561	0.2931	0.2117	0.3533	3.4662	2.5033	4.1790
6	8.3182	-4.2177	-1.1460	0.2543	0.2566	0.3153	3.0577	3.0851	3.7899
7	8.3593	-4.0268	-0.4131	0.3104	0.3007	0.2573	3.7134	3.5969	3.0775
8	8.4293	-4.4514	-1.2264	0.2704	0.4087	0.3013	3.2078	4.8481	3.5745
9	8.5355	-3.4868	-1.2610	0.2997	0.9478	0.4022	3.5110	11.1042	4.7126
10	8.7611	-2.8034	-0.7165	0.5031	1.2979	1.5221	5.7422	14.8144	17.3735

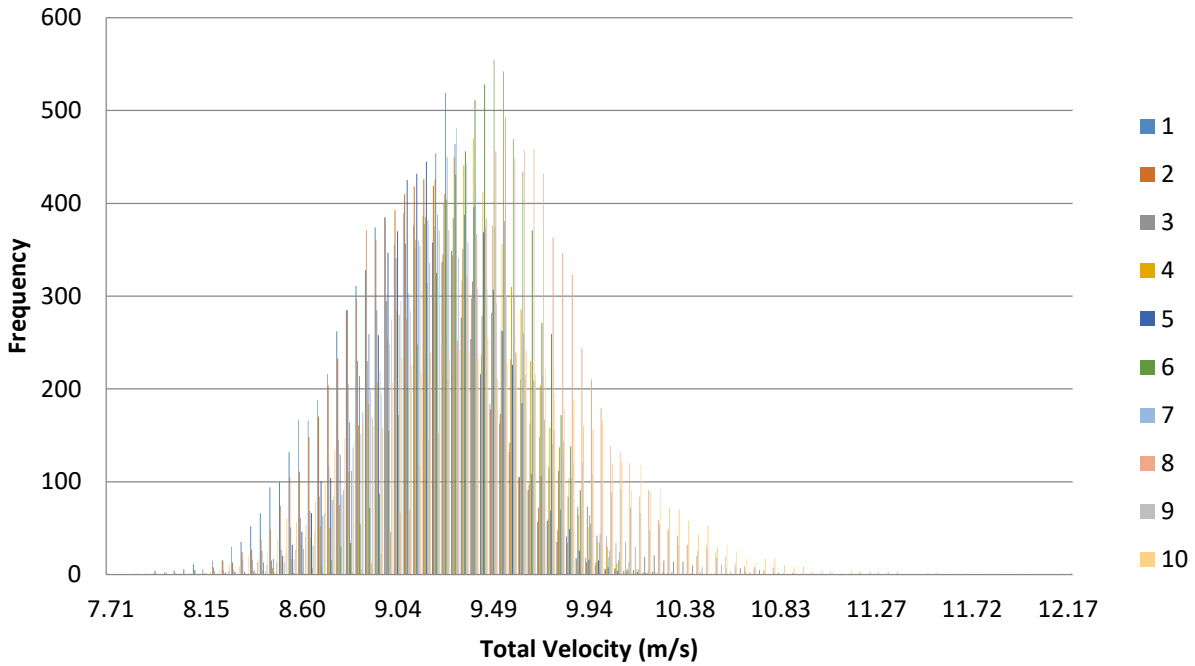


Figure 1. Velocity histogram for each interval (100 bins).

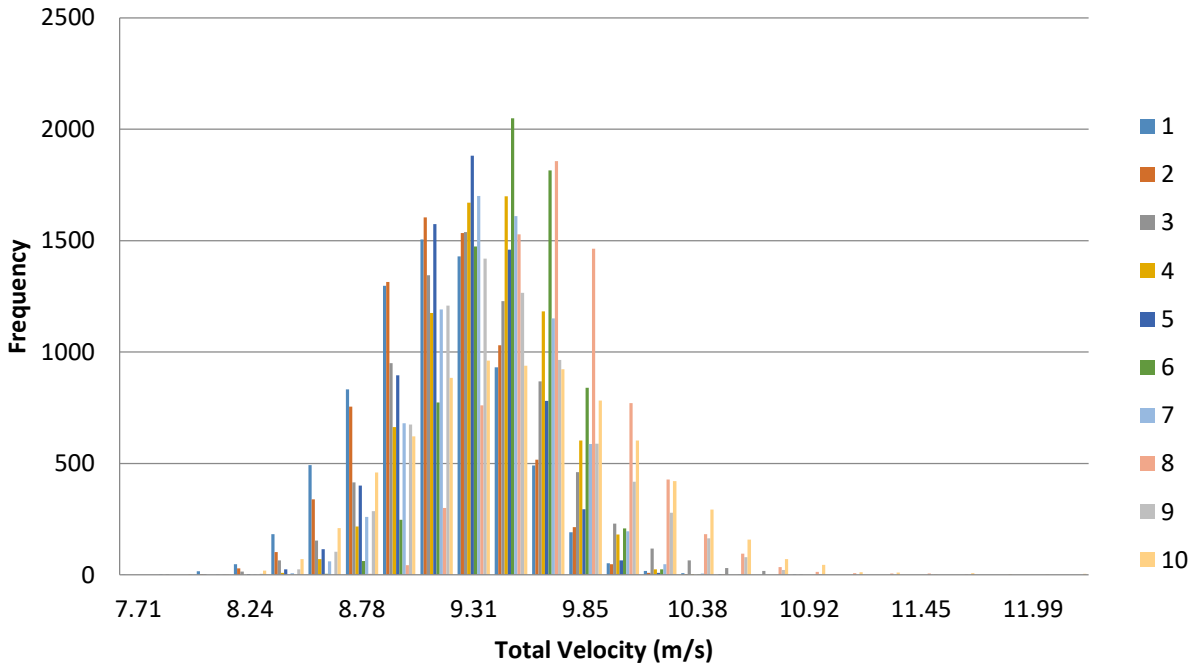
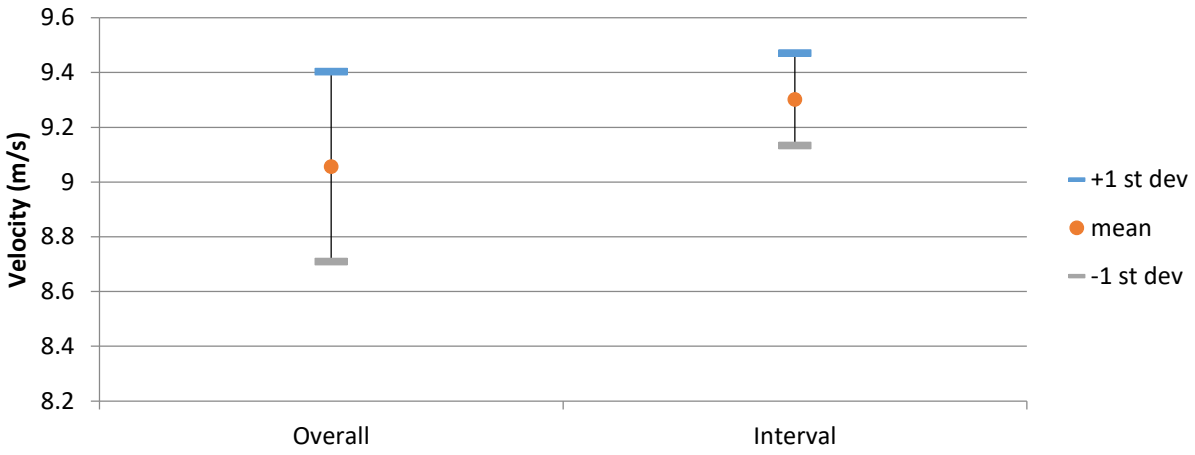
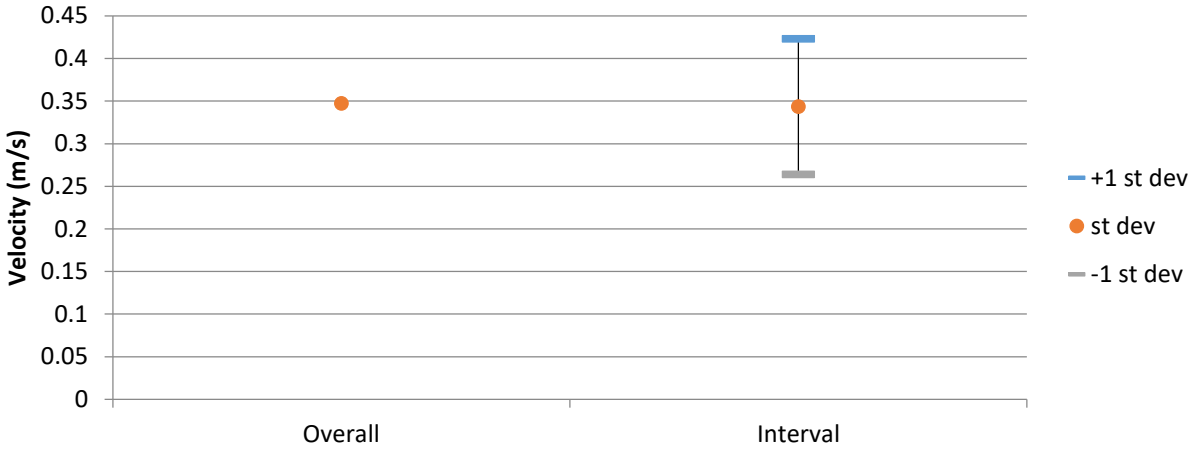


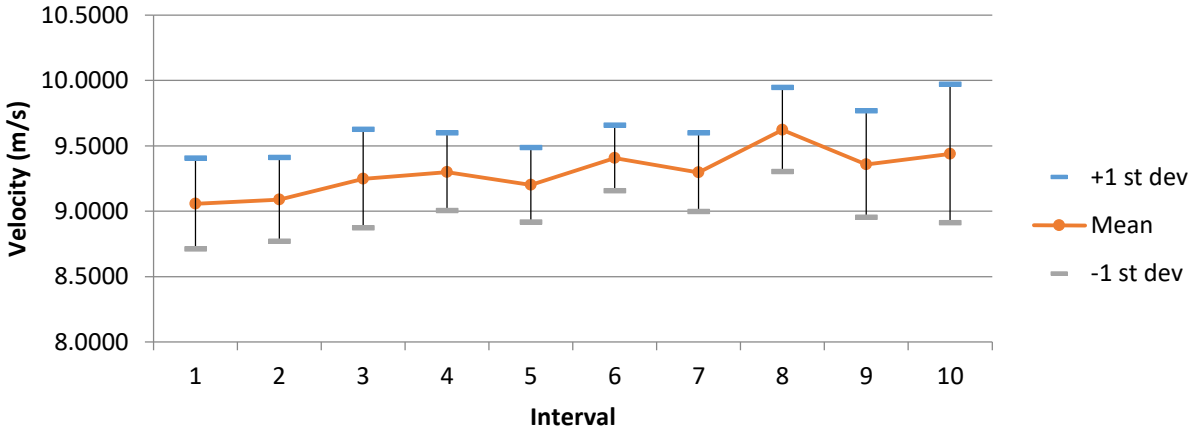
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 16
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: C5
First Sample Date: 09-Aug-13
First Sample Time: 09:10:33.890

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.4481	7.7779	8.9688	0.2705
u	9.8400	6.3100	8.0289	0.2993
v	-1.6100	-5.6700	-3.9097	0.4470
w	1.5000	-3.0000	-0.5103	0.4627

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	9.8846	8.1761	8.9908	0.2249	2.5002
2	9.7239	8.1591	8.9409	0.2235	2.8677
3	9.7941	7.8832	8.8882	0.2549	2.7863
4	9.9492	7.8938	8.9571	0.2496	2.9019
5	9.9776	8.1029	9.0403	0.2623	2.6277
6	10.1396	8.2640	9.0948	0.2390	2.5780
7	9.7900	8.1532	8.9583	0.2309	3.4616
8	10.2274	7.8990	8.9914	0.3112	3.5957
9	10.4481	7.7779	8.9595	0.3222	3.2766
10	10.0172	7.7885	8.8674	0.2905	2.9091
		Average	8.9689	0.2609	2.9505
		St Dev	0.0666	0.0356	0.3560

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	7.9812	-4.0840	-0.5572	0.2580	0.2393	0.2676	3.2329	2.9985	3.3526
2	7.8688	-4.2127	-0.4285	0.2596	0.2166	0.1638	3.2985	2.7532	2.0820
3	8.1777	-3.4123	-0.4807	0.2510	0.3210	0.3867	3.0698	3.9256	4.7286
4	8.0408	-3.8668	-0.5650	0.2704	0.2786	0.4640	3.3632	3.4650	5.7709
5	8.0578	-4.0023	-0.5905	0.3007	0.4381	0.4663	3.7320	5.4369	5.7873
6	8.0089	-4.2614	-0.4572	0.2884	0.3229	0.2718	3.6010	4.0312	3.3941
7	7.9184	-4.1552	-0.3625	0.2556	0.2014	0.3175	3.2284	2.5431	4.0103
8	8.1111	-3.6981	-0.9388	0.2728	0.3584	0.6262	3.3628	4.4192	7.7200
9	8.0387	-3.8892	-0.4331	0.3173	0.3341	0.4799	3.9475	4.1558	5.9703
10	8.0862	-3.5148	-0.2893	0.3719	0.6095	0.6171	4.5992	7.5373	7.6317

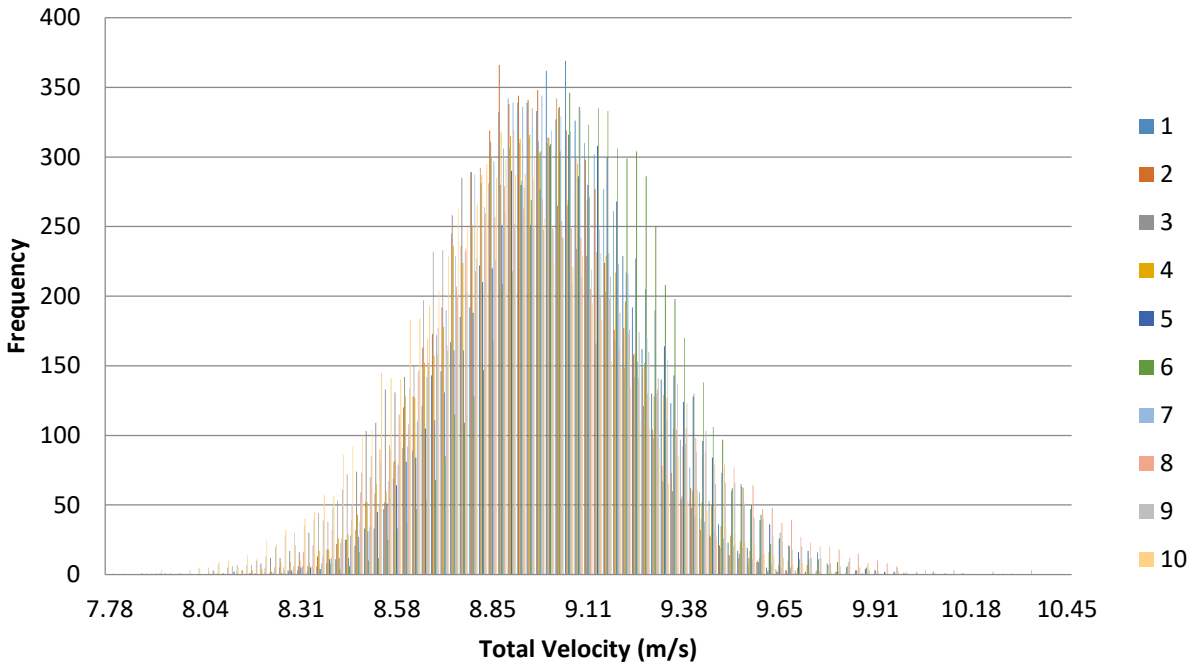


Figure 1. Velocity histogram for each interval (100 bins).

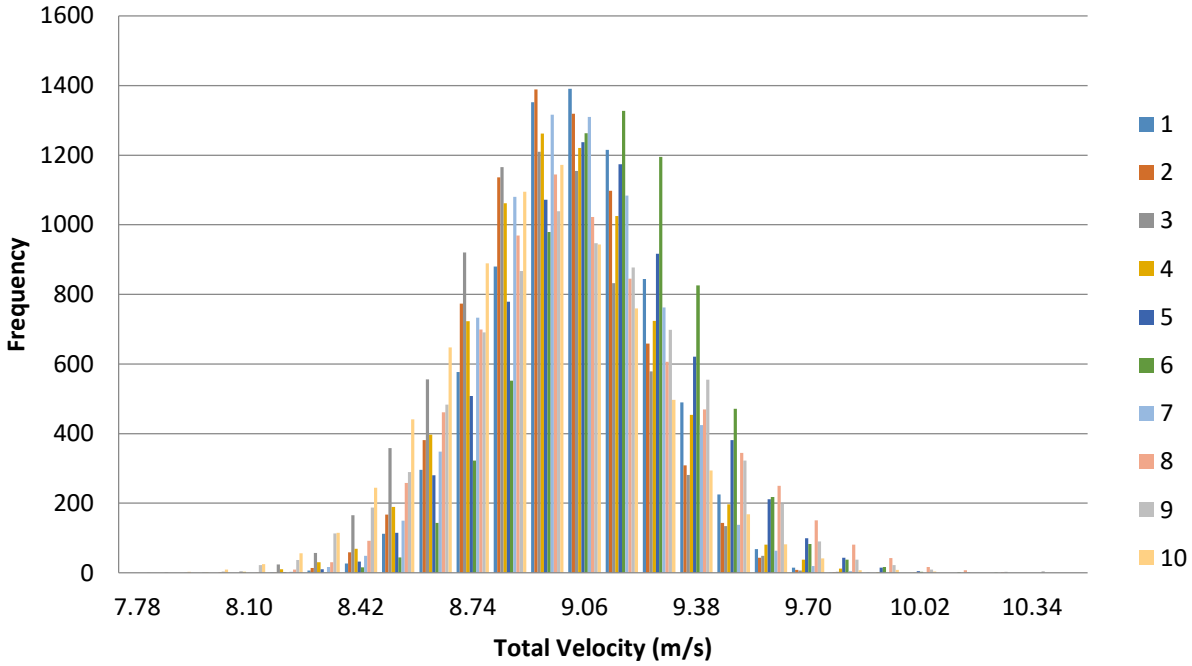
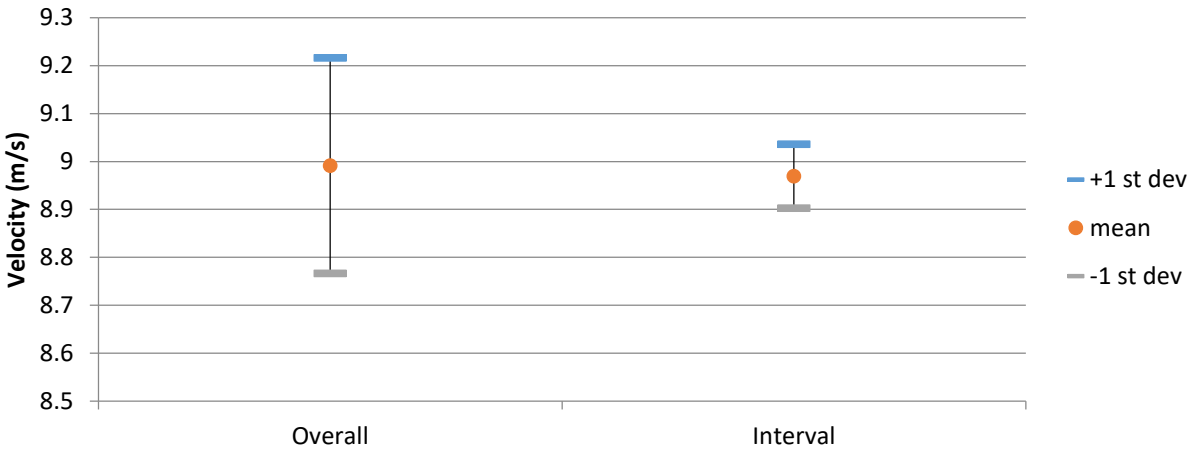
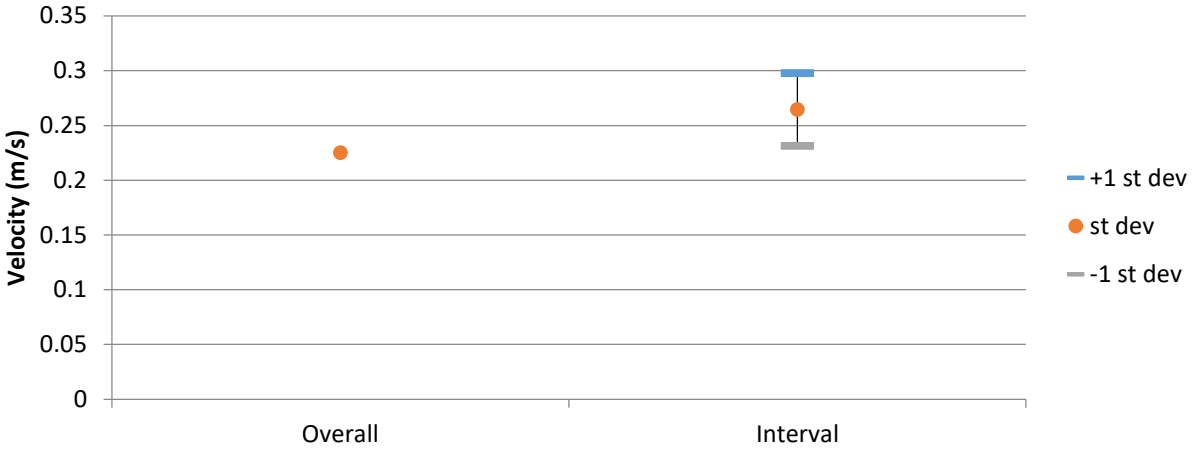


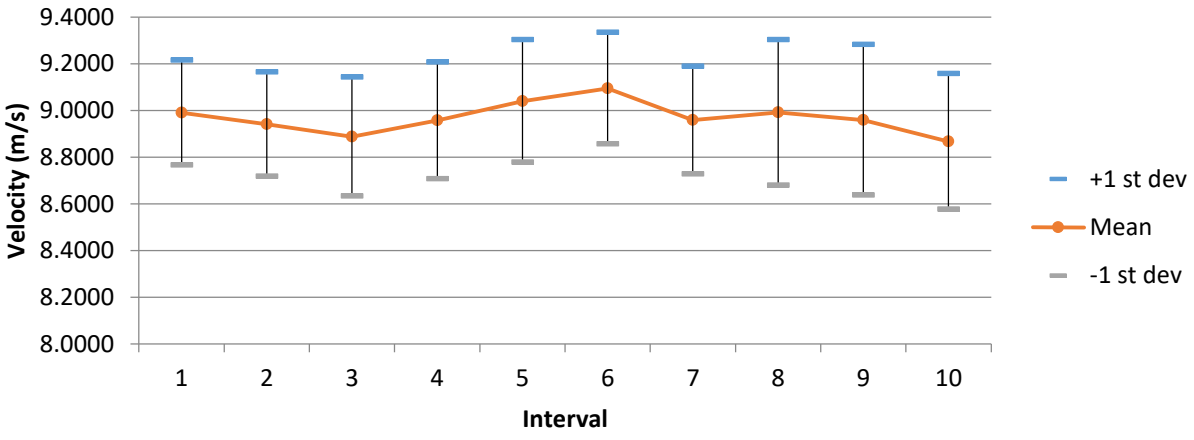
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 17
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: D5
First Sample Date: 09-Aug-13
First Sample Time: 09:12:23.593

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.3179	7.7056	9.8529	0.3616
u	11.3000	7.0800	9.3170	0.3302
v	0.1890	-6.2200	-2.8005	0.9440
w	3.0700	-3.3500	-0.9308	0.8337

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	10.5868	8.8704	9.6950	0.2218	2.6136
2	10.7446	8.8160	9.7924	0.2559	2.6544
3	10.9461	8.8396	9.7775	0.2595	3.5923
4	11.2958	8.8289	10.1867	0.3659	3.4768
5	11.2323	8.3946	9.9648	0.3465	3.5839
6	11.8692	8.5405	10.0272	0.3594	3.1708
7	11.3789	8.7148	9.8786	0.3132	4.2172
8	12.3179	7.7056	9.9016	0.4176	3.0823
9	11.1841	8.3865	9.6059	0.2961	3.3541
10	11.0652	8.5670	9.6996	0.3253	3.2084
		Average	9.8529	0.3161	3.2954
		St Dev	0.1752	0.0594	0.4474

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.3432	-2.2571	-1.0900	0.2398	0.4646	0.4381	2.5665	4.9722	4.6889
2	9.3399	-2.4971	-1.2735	0.2458	0.6999	0.5620	2.6318	7.4933	6.0175
3	9.1747	-3.1861	-0.7810	0.2650	0.5251	0.6197	2.8879	5.7228	6.7546
4	9.2121	-3.9340	-1.6401	0.2437	0.6904	0.5814	2.6452	7.4949	6.3118
5	9.5120	-2.5139	-0.8602	0.3800	0.6319	1.1562	3.9945	6.6432	12.1554
6	9.2589	-3.4712	-1.4184	0.3092	0.6938	0.5567	3.3396	7.4936	6.0124
7	9.2706	-3.1201	-0.6961	0.3354	0.6744	0.9776	3.6174	7.2745	10.5449
8	9.2828	-3.2454	-0.2805	0.4318	0.7199	0.8553	4.6515	7.7557	9.2134
9	9.2800	-2.2221	-0.6345	0.3295	0.7455	0.4882	3.5503	8.0331	5.2613
10	9.4960	-1.5587	-0.6341	0.2912	0.7170	0.7640	3.0663	7.5509	8.0453

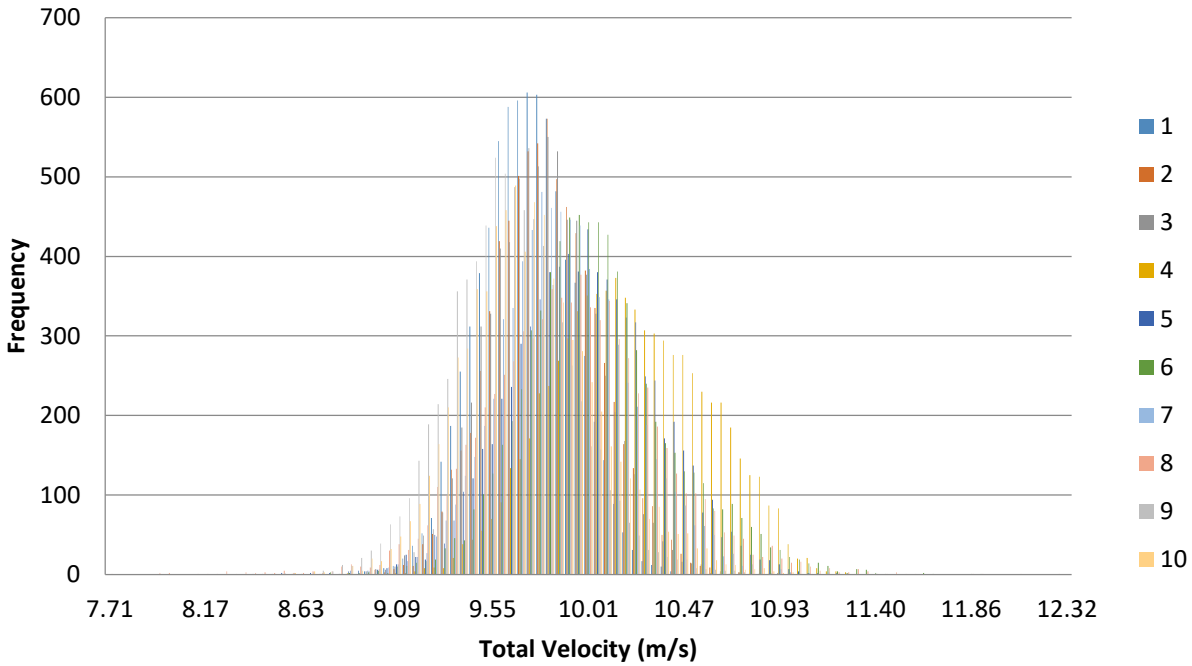


Figure 1. Velocity histogram for each interval (100 bins).

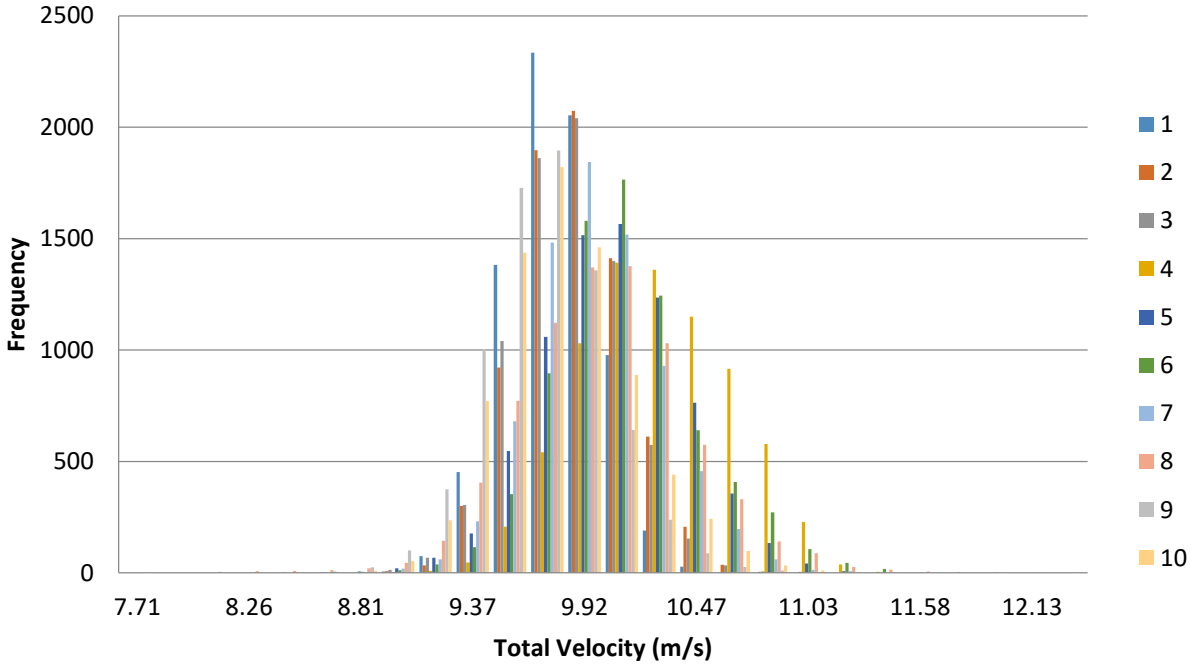
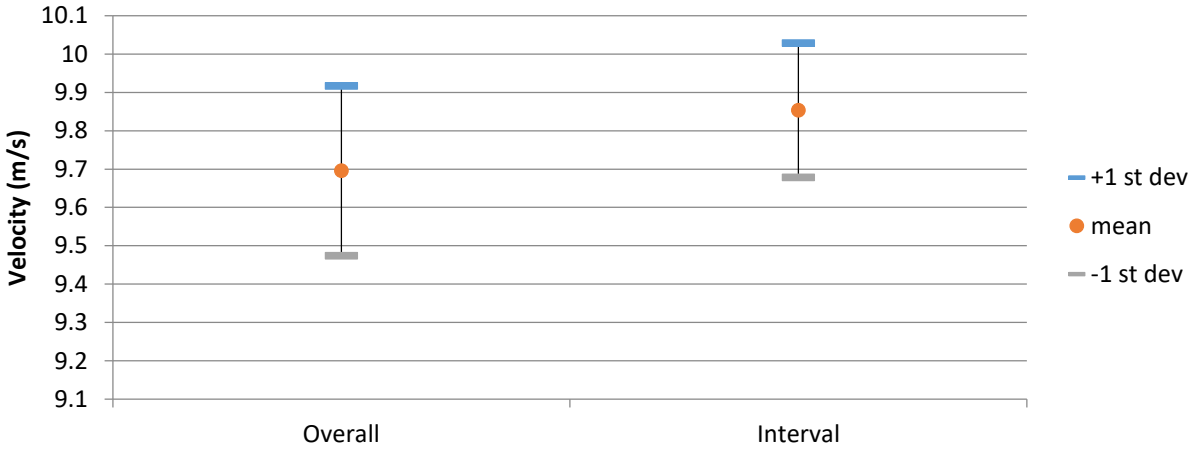
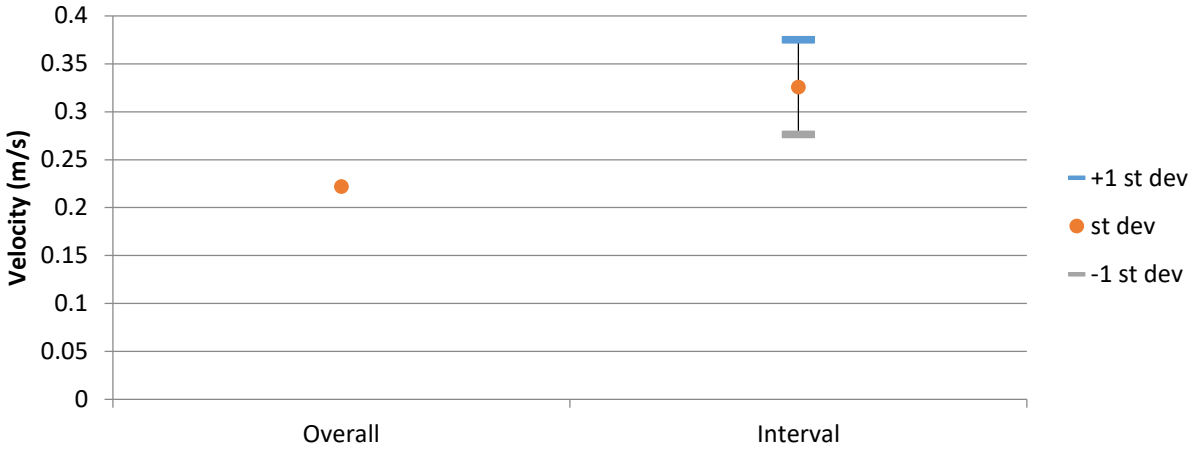


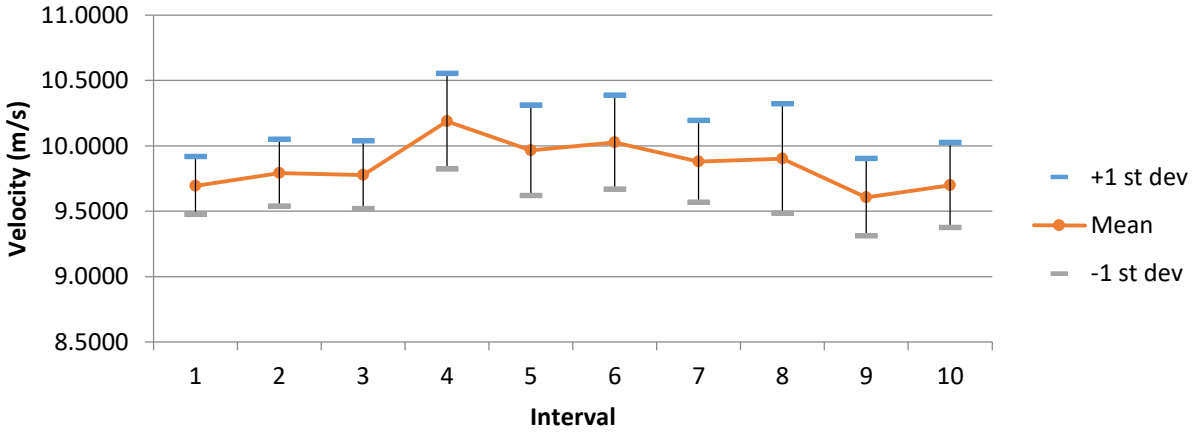
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 18
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: D4
First Sample Date: 09-Aug-13
First Sample Time: 09:14:16.328

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.2340	8.5692	9.9571	0.3260
u	12.2000	8.3700	9.7428	0.3355
v	1.1900	-4.0600	-1.5329	0.6684
w	1.5400	-3.6500	-1.0080	0.6358

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	10.9769	8.9238	9.9566	0.3030	3.1002
2	10.8651	8.9172	9.9324	0.3079	2.9703
3	10.9549	8.8053	10.0176	0.2976	2.9796
4	11.2320	9.0849	10.0745	0.3002	3.6770
5	12.2340	8.7197	10.0905	0.3710	3.2638
6	10.8653	8.6152	9.9059	0.3233	3.2801
7	10.9783	8.6881	9.8956	0.3246	3.2932
8	11.1707	8.5692	9.8488	0.3243	3.1509
9	10.9052	8.9050	9.9293	0.3129	3.0330
10	10.9088	8.8066	9.9200	0.3009	3.1793
		Average	9.9571	0.3166	3.1927
		St Dev	0.0790	0.0218	0.1970

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.7660	-1.7696	-0.6785	0.2946	0.2298	0.3439	3.0162	2.3530	3.5212
2	9.7503	-1.5840	-0.9792	0.2996	0.2271	0.2636	3.0723	2.3294	2.7035
3	9.7906	-1.2807	-1.3158	0.3047	0.5811	0.8845	3.1124	5.9352	9.0342
4	9.7481	-1.4584	-1.8483	0.3188	0.6515	0.7017	3.2708	6.6837	7.1985
5	10.0077	-0.3871	-0.8753	0.3713	0.5480	0.6699	3.7105	5.4763	6.6934
6	9.8267	-1.0078	-0.5216	0.3140	0.3731	0.3766	3.1949	3.7965	3.8321
7	9.6055	-2.0578	-0.8490	0.3361	0.6409	0.5328	3.4987	6.6717	5.5468
8	9.6542	-1.7929	-0.6780	0.3114	0.2646	0.2417	3.2259	2.7404	2.5035
9	9.6322	-2.0880	-1.0757	0.3021	0.2440	0.4920	3.1362	2.5327	5.1075
10	9.6463	-1.9023	-1.2583	0.2975	0.3412	0.1980	3.0846	3.5375	2.0530

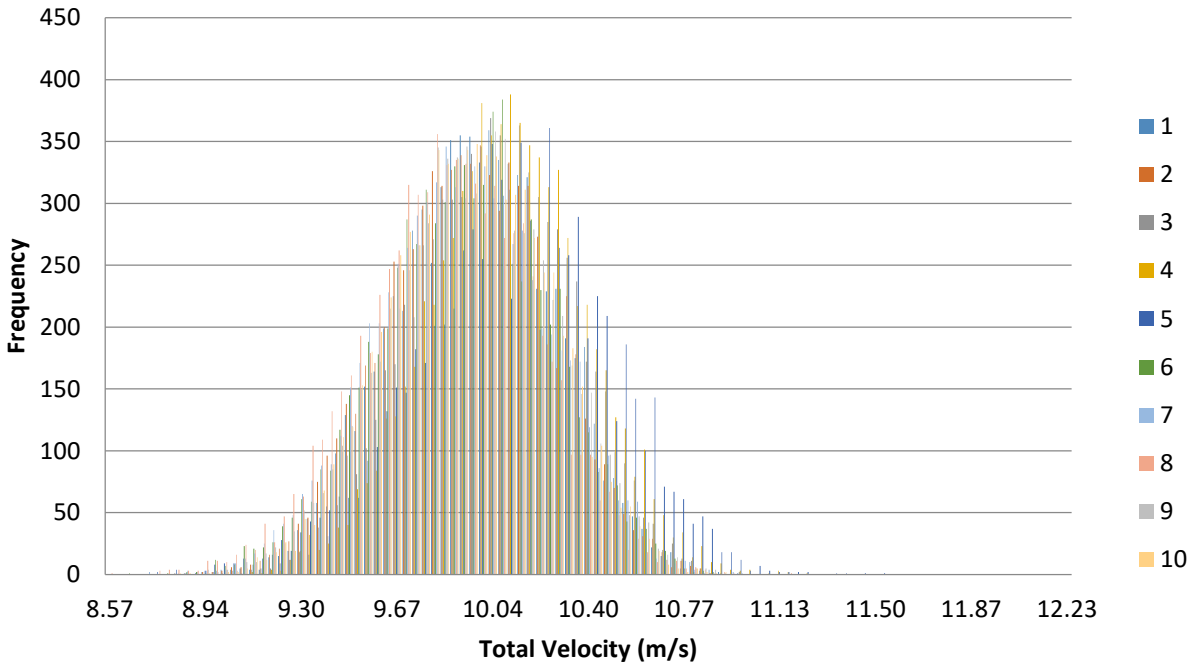


Figure 1. Velocity histogram for each interval (100 bins).

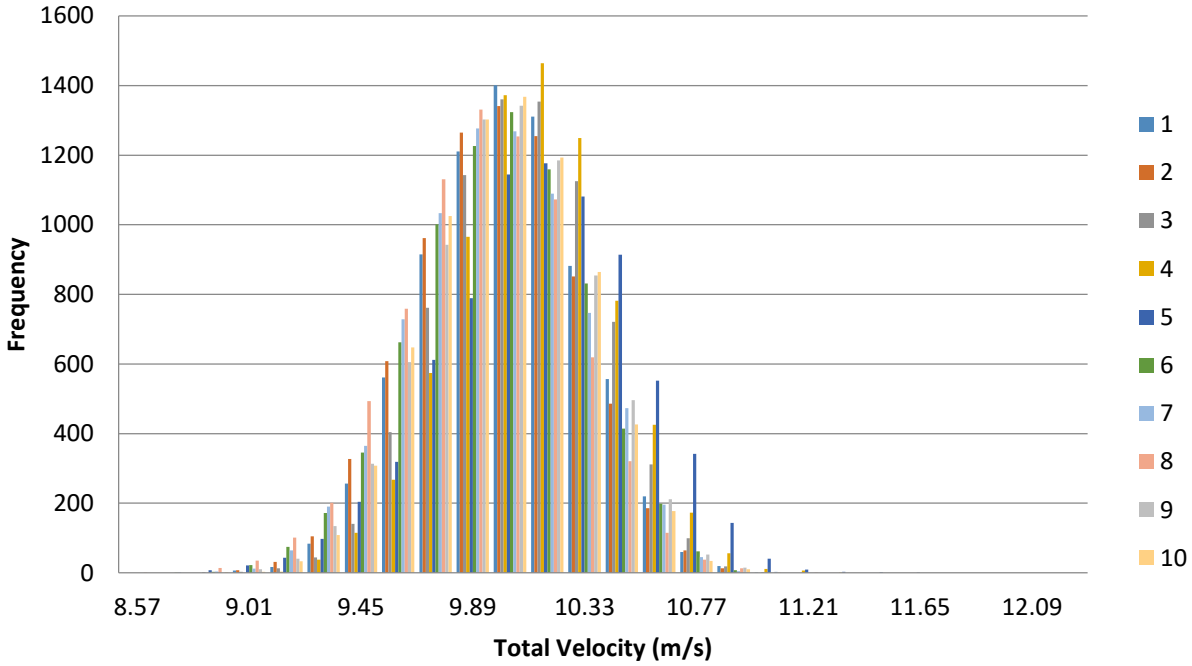
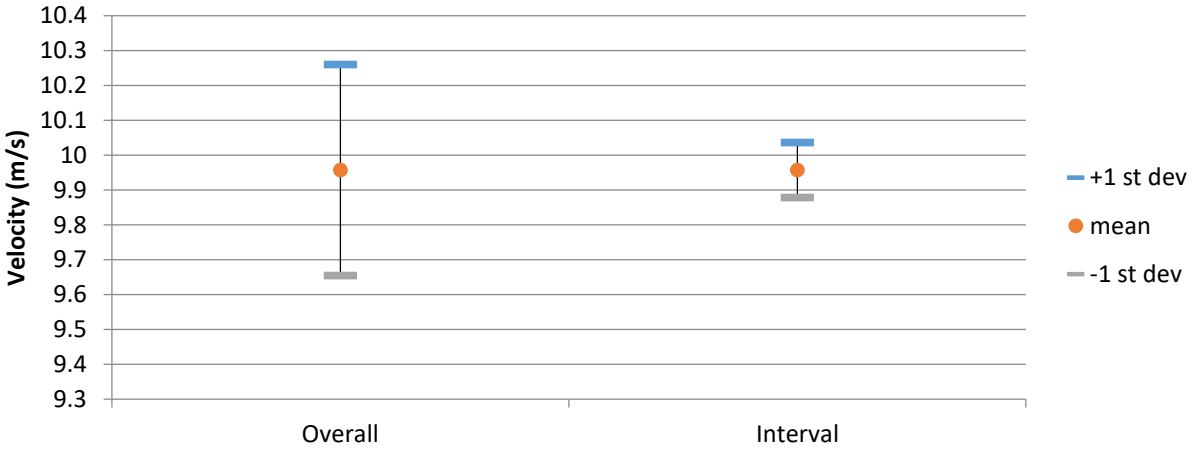
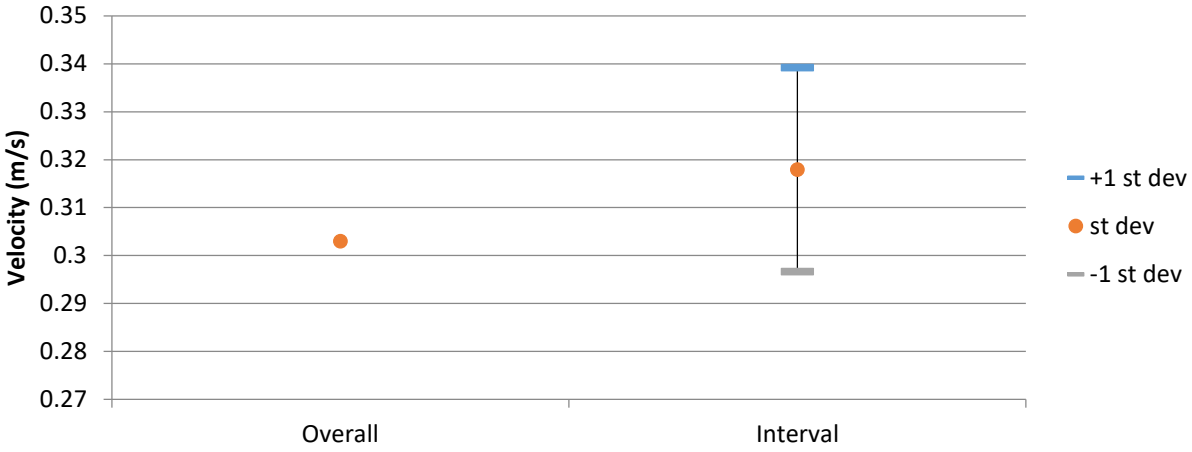


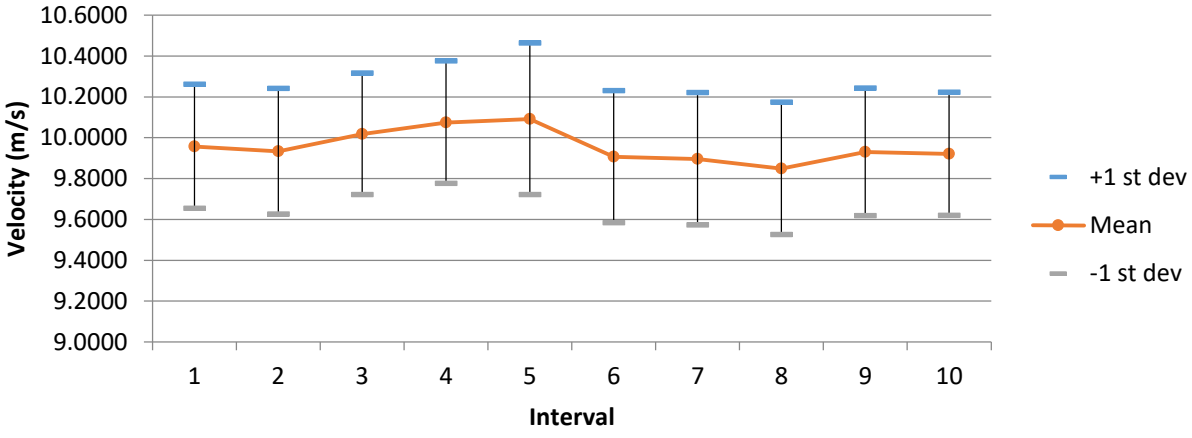
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 19
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: D3
First Sample Date: 09-Aug-13
First Sample Time: 09:15:46.140

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.7021	9.6451	10.6051	0.2562
u	11.4000	8.1600	10.0720	0.3123
v	1.3500	-5.8900	-1.8116	0.8809
w	0.2690	-5.9000	-2.5080	0.8024

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.3445	9.7638	10.6091	0.2100	1.8504
2	11.3338	9.7324	10.5098	0.1945	2.3373
3	11.8292	9.7634	10.5579	0.2468	2.5378
4	11.7611	9.9169	10.7240	0.2722	1.8175
5	11.3497	9.7407	10.6341	0.1933	1.6996
6	11.2057	9.7646	10.4639	0.1778	2.1124
7	11.3787	9.6800	10.5366	0.2226	2.0769
8	11.2167	9.6451	10.5140	0.2184	2.2144
9	11.5546	9.7894	10.6570	0.2360	2.8884
10	12.7021	9.7760	10.8448	0.3132	2.1543
		Average	10.6051	0.2285	2.1689
		St Dev	0.1152	0.0407	0.3378

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.2137	-1.8135	-2.0647	0.2132	0.5411	0.6223	2.0874	5.2979	6.0931
2	10.0548	-2.0661	-2.1837	0.1671	0.4811	0.3137	1.6618	4.7848	3.1200
3	10.0278	-1.5700	-2.6093	0.2429	1.0560	0.7264	2.4226	10.5307	7.2436
4	10.2078	-1.7113	-2.5066	0.2321	0.9738	0.8151	2.2741	9.5397	7.9854
5	10.0216	-2.3643	-2.5884	0.1691	0.3187	0.5187	1.6870	3.1803	5.1759
6	10.0789	-1.5300	-2.3135	0.1600	0.2696	0.3859	1.5871	2.6754	3.8287
7	9.9873	-1.1238	-3.0154	0.3054	0.5593	0.7504	3.0579	5.6002	7.5136
8	10.1123	-1.9845	-1.9551	0.1808	0.5317	0.5078	1.7879	5.2584	5.0213
9	10.2410	-1.0305	-2.4324	0.3895	0.8450	0.9513	3.8030	8.2513	9.2892
10	9.7748	-2.9221	-3.4109	0.5366	0.9080	0.9361	5.4893	9.2892	9.5767

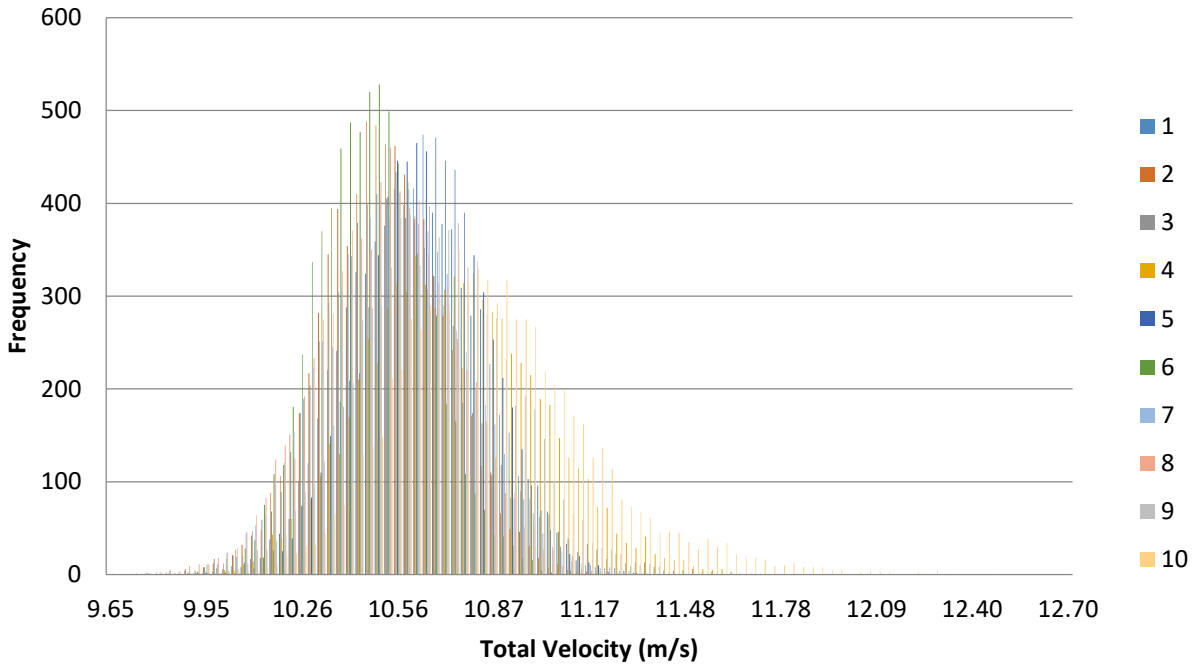


Figure 1. Velocity histogram for each interval (100 bins).

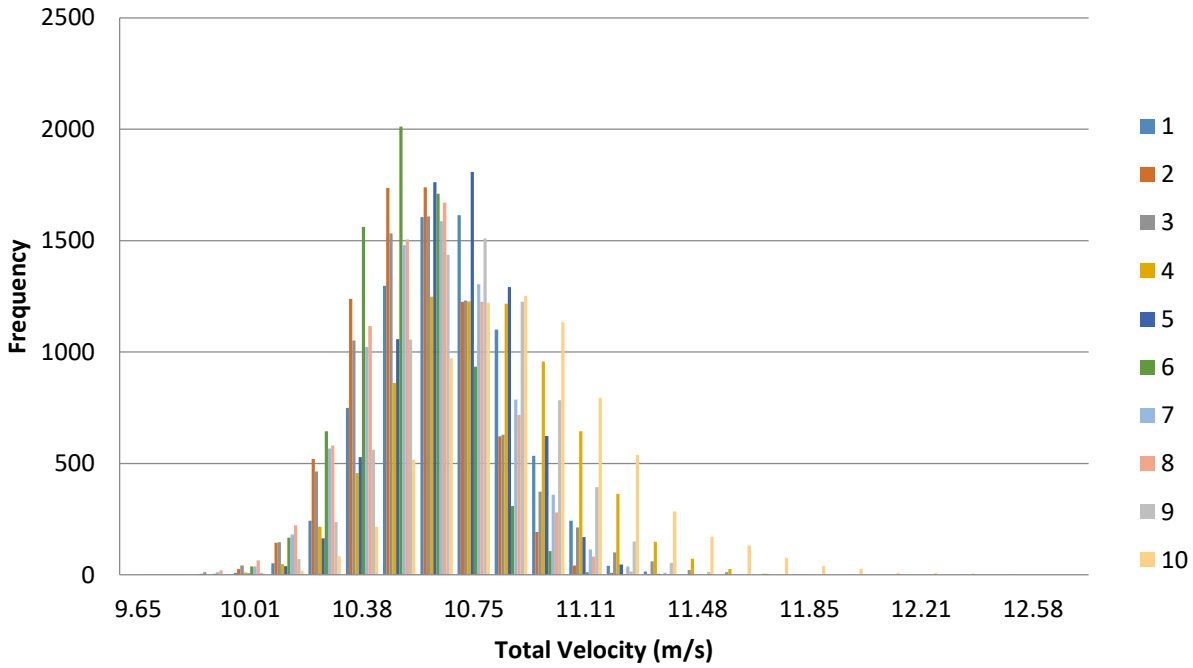
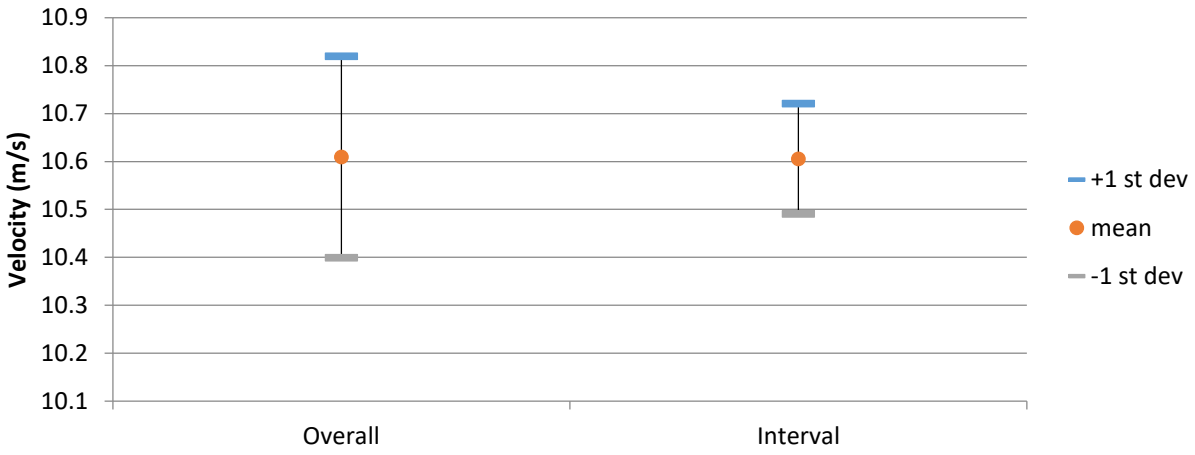
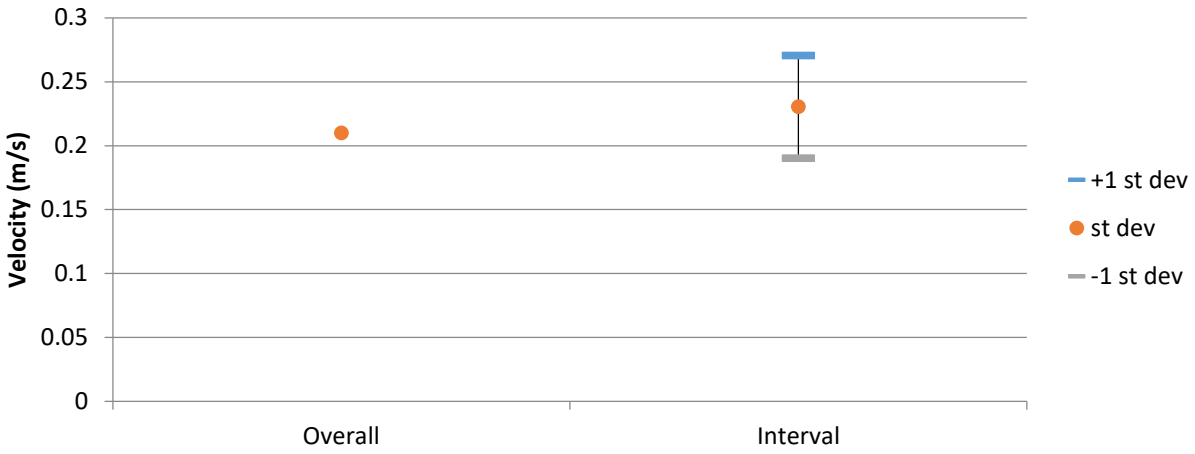


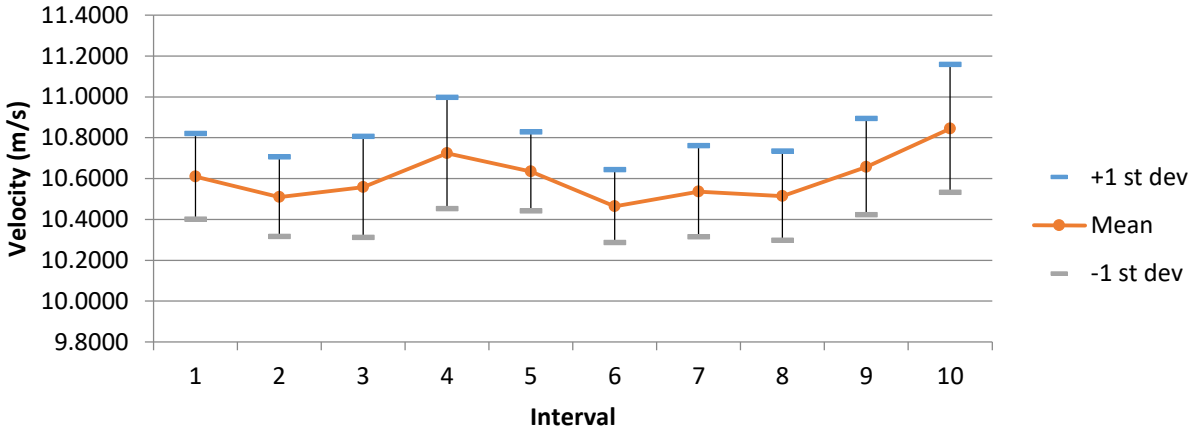
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 20
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: F3
First Sample Date: 09-Aug-13
First Sample Time: 09:18:13.437

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.9473	10.1956	11.0271	0.2705
u	12.1000	9.1700	10.3952	0.2990
v	5.1000	-0.5260	2.3015	0.8205
w	0.6870	-5.4700	-2.5976	0.8972

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.4143	10.2195	10.8841	0.1725	1.4201
2	11.4957	10.2536	10.8560	0.1542	1.5571
3	11.4000	10.2114	10.8099	0.1683	2.5128
4	11.8696	10.1956	10.9859	0.2761	3.2864
5	12.9473	10.5945	11.3838	0.3741	1.5575
6	11.5295	10.2956	10.9142	0.1700	1.4946
7	11.8471	10.5669	11.1672	0.1669	1.6291
8	11.6019	10.3788	11.0327	0.1797	1.4364
9	11.6685	10.5148	11.1551	0.1602	1.8286
10	11.6285	10.4013	11.0826	0.2027	1.8361
		Average	11.0271	0.2025	1.8559
		St Dev	0.1757	0.0698	0.5661

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.2919	1.6402	-3.0565	0.2464	0.4924	0.4852	2.3946	4.7842	4.7143
2	10.3541	1.9449	-2.5395	0.2029	0.2917	0.5574	1.9597	2.8168	5.3832
3	10.3841	1.3075	-2.5867	0.2062	0.4770	0.6178	1.9859	4.5939	5.9496
4	10.2467	1.6565	-3.4584	0.3139	0.8188	0.5461	3.0637	7.9911	5.3297
5	10.6954	2.5541	-2.4329	0.4839	0.5312	1.5435	4.5244	4.9671	14.4318
6	10.5085	2.0773	-1.7416	0.2094	0.6319	0.9643	1.9930	6.0132	9.1760
7	10.4064	3.1775	-2.4258	0.1851	0.5162	0.3983	1.7784	4.9603	3.8278
8	10.4398	3.0178	-1.7514	0.1921	0.5763	0.4693	1.8399	5.5200	4.4952
9	10.3768	2.7118	-3.0335	0.2008	0.3308	0.2811	1.9351	3.1877	2.7089
10	10.2480	2.9274	-2.9498	0.3164	0.4395	0.5283	3.0877	4.2882	5.1553

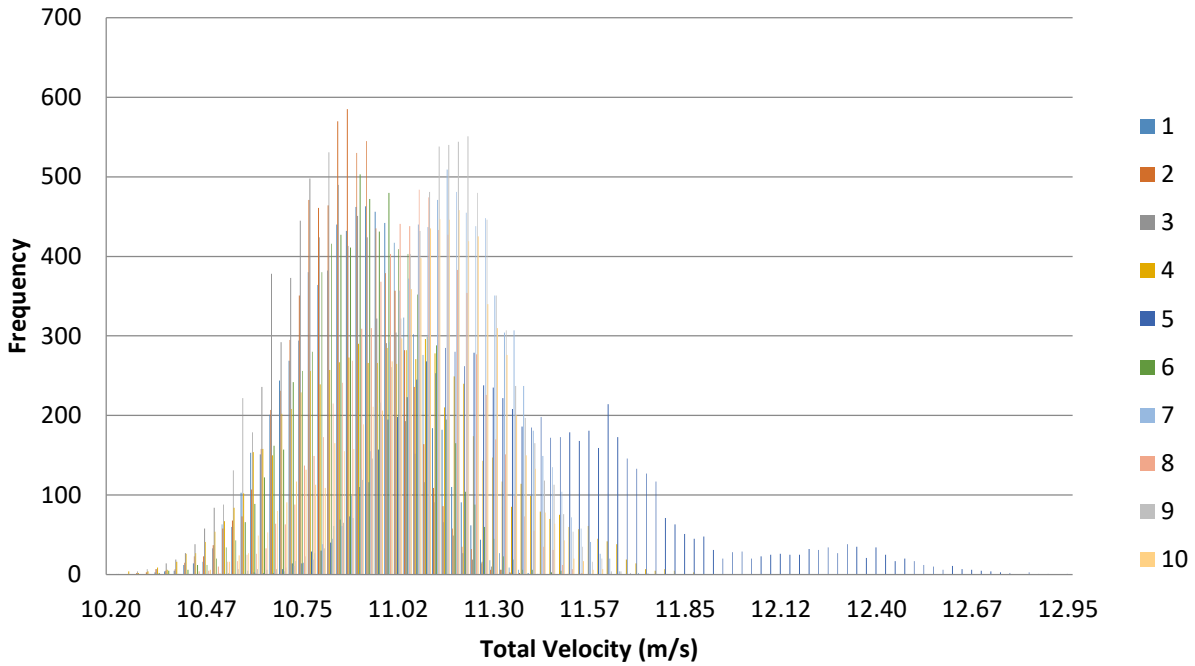


Figure 1. Velocity histogram for each interval (100 bins).

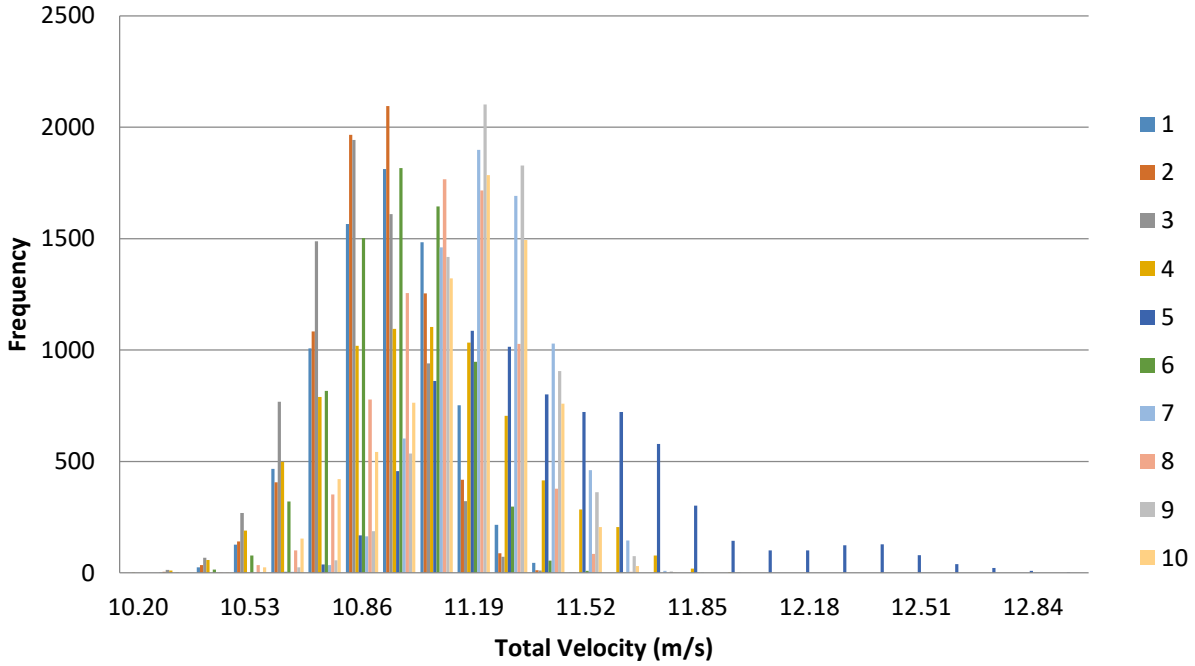
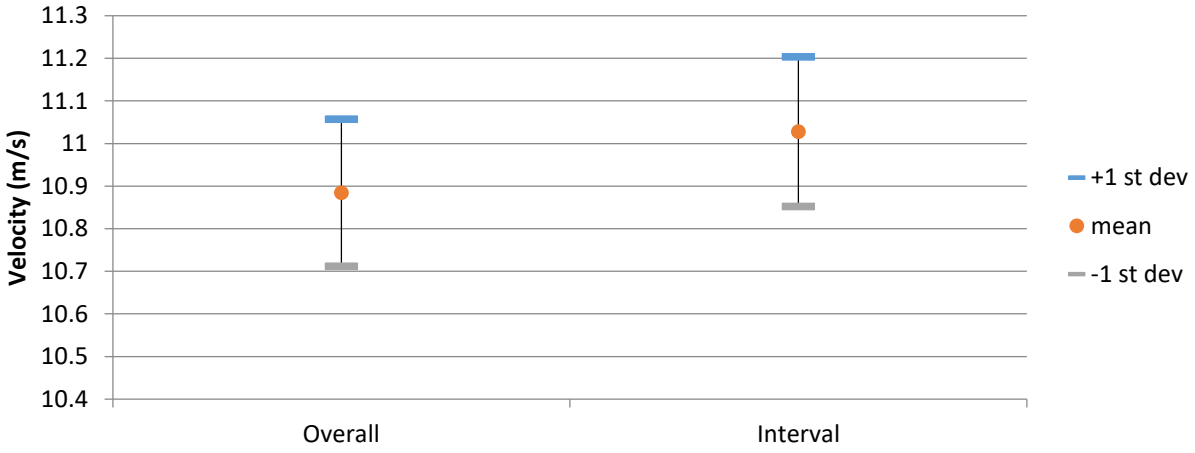
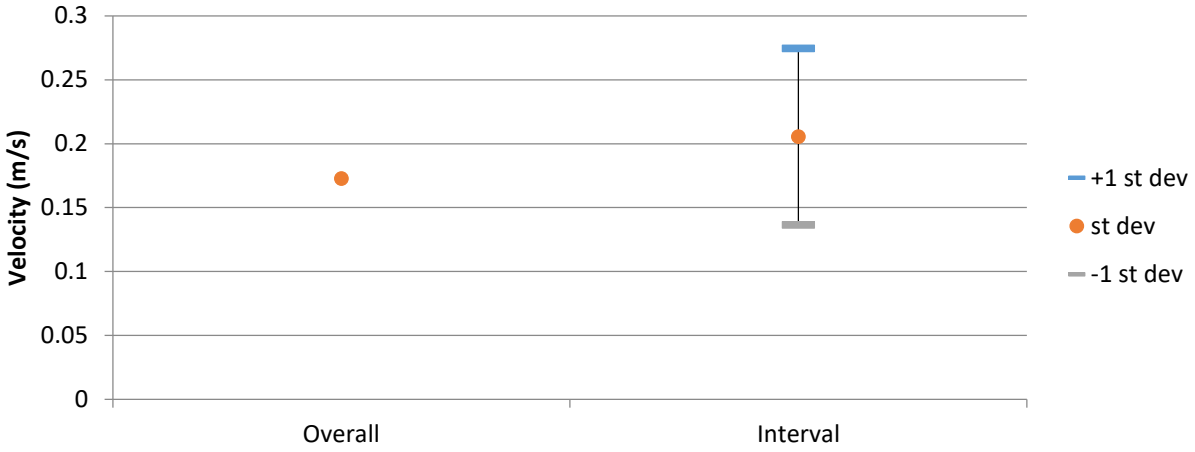


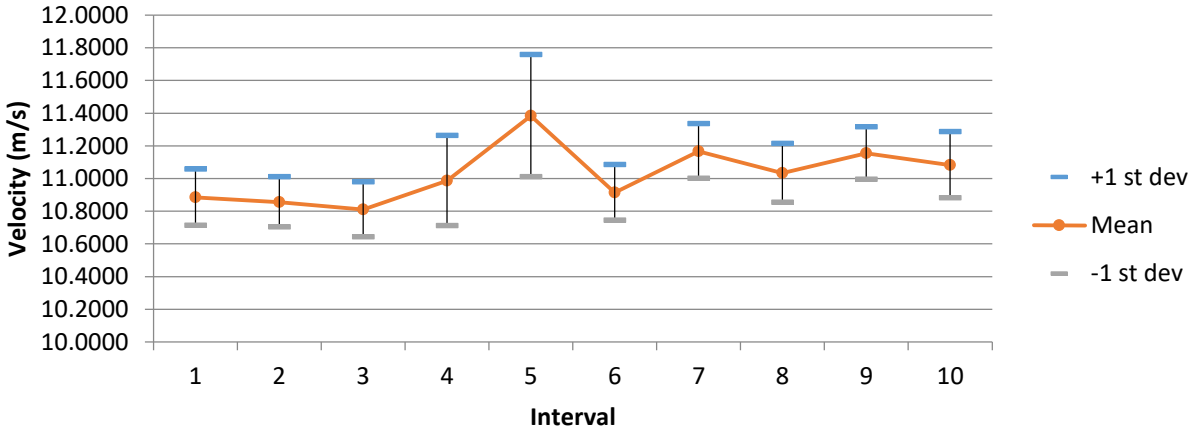
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 21
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: H3
First Sample Date: 09-Aug-13
First Sample Time: 09:20:28.796

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	13.0536	8.2386	10.3737	0.5796
u	9.2900	6.1800	7.6959	0.5109
v	9.3300	3.0400	6.2688	0.7618
w	0.6880	-4.4500	-2.8951	0.4488

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	12.9215	8.9470	10.9549	0.6137	5.6020	4	0.03 %
2	12.4436	8.9889	10.6790	0.4027	3.7713	53	0.42 %
3	11.8536	8.3050	10.2867	0.4690	4.5594	267	2.14 %
4	12.7330	8.4236	10.2774	0.5538	5.3888	155	1.24 %
5	13.0536	8.6288	10.5099	0.6293	5.9875	85	0.68 %
6	13.0161	8.2386	10.3859	0.6376	6.1392	70	0.56 %
7	11.9644	8.5786	10.0887	0.4498	4.4589	31	0.25 %
8	11.7349	8.5744	10.2063	0.4269	4.1825	36	0.29 %
9	12.0230	8.3364	10.1884	0.4636	4.5500	248	1.98 %
10	11.5401	8.4238	10.1468	0.4720	4.6520	125	1.00 %
		Average	10.3724	0.5118	4.9292		
		St dev	0.2572	0.0839	0.7566		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.2608	6.6530	-2.6809	0.4344	0.6626	0.2632	5.2581	8.0210	3.1864
2	7.9265	6.5716	-2.7565	0.3127	0.6271	0.3118	3.9446	7.9114	3.9333
3	7.5436	6.2661	-2.9874	0.5589	0.6568	0.4458	7.4084	8.7072	5.9096
4	7.4730	6.3715	-2.9179	0.5073	0.7269	0.4355	6.7879	9.7271	5.8274
5	8.0069	6.2194	-2.5341	0.5821	0.9253	0.6689	7.2705	11.5557	8.3544
6	7.7648	6.2361	-2.8351	0.5019	0.7819	0.4378	6.4632	10.0692	5.6389
7	7.6572	5.8100	-2.9641	0.2891	0.7781	0.3474	3.7760	10.1623	4.5373
8	7.5301	6.1666	-3.0002	0.3133	0.6536	0.3064	4.1605	8.6802	4.0689
9	7.3633	6.2938	-3.0749	0.3308	0.7021	0.3618	4.4930	9.5351	4.9141
10	7.4123	6.0991	-3.2095	0.3261	0.7140	0.3482	4.3992	9.6324	4.6974

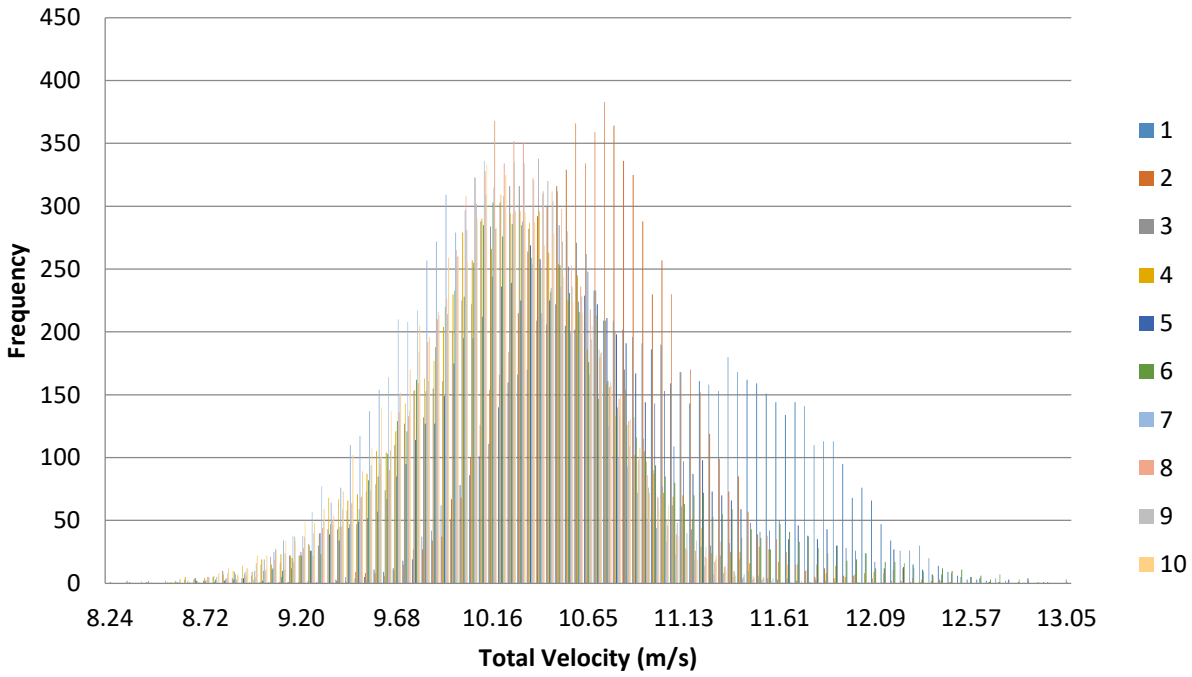


Figure 1. Velocity histogram for each interval (100 bins).

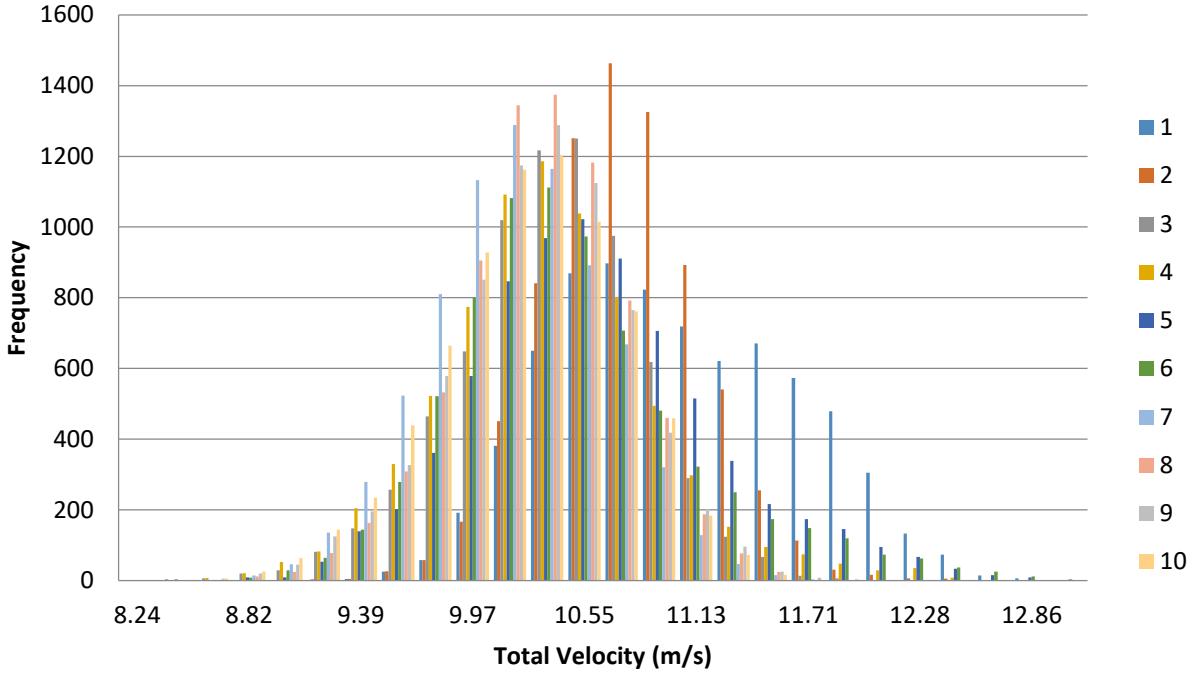
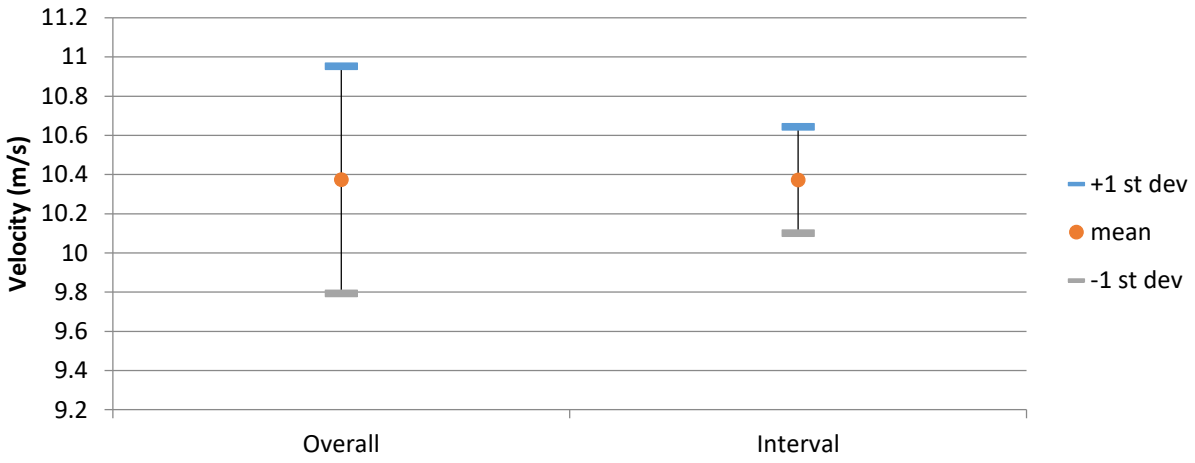
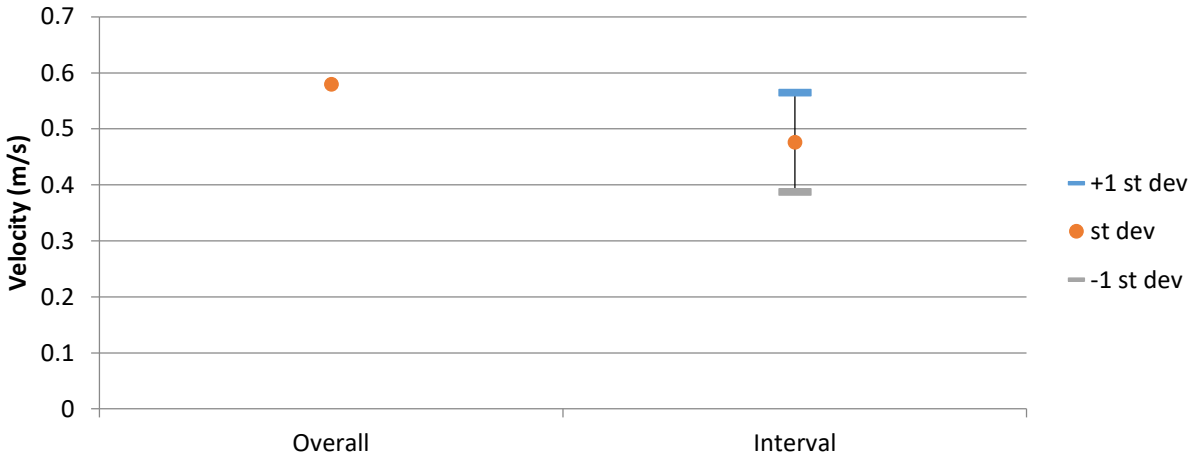


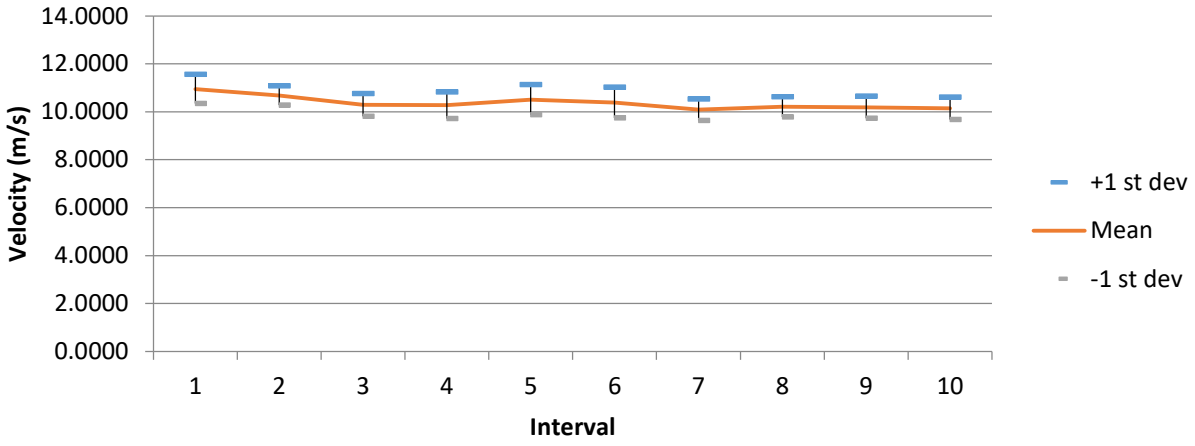
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 22
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: G3
First Sample Date: 09-Aug-13
First Sample Time: 09:22:45.125

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	15.4607	9.2800	10.7392	0.5785
u	10.8000	7.2300	9.0964	0.4968
v	10.2000	1.5000	4.3026	1.0938
w	-1.5000	-7.3100	-3.5393	0.6630

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	15.4607	9.3946	11.2982	0.7350	6.5055	24	0.19 %
2	13.9174	10.1462	11.4713	0.7180	6.2590	1	0.01 %
3	12.4898	10.0545	10.8892	0.3615	3.3196	0	0.00 %
4	11.7242	9.4782	10.4786	0.2309	2.2039	0	0.00 %
5	11.3270	9.9601	10.5008	0.2184	2.0797	0	0.00 %
6	12.0648	9.8850	10.5711	0.2847	2.6929	0	0.00 %
7	12.9115	9.7903	10.7442	0.4885	4.5471	0	0.00 %
8	12.5625	9.5788	10.3013	0.2936	2.8500	0	0.00 %
9	12.4212	9.2800	10.3821	0.3515	3.3854	0	0.00 %
10	12.8322	9.9292	10.7573	0.4335	4.0299	0	0.00 %
		Average	10.7394	0.4116	3.7873		
		St dev	0.3665	0.1764	1.4837		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.5001	5.7339	-4.6125	0.4705	1.1033	0.5878	5.5352	12.9803	6.9153
2	9.6283	4.8388	-3.6291	0.4502	1.4956	0.6150	4.6755	15.5330	6.3875
3	9.3728	4.4030	-3.2940	0.2968	0.6438	0.3419	3.1662	6.8691	3.6477
4	9.3151	3.5195	-3.1966	0.3140	0.5064	0.3506	3.3708	5.4360	3.7637
5	9.4493	3.4704	-2.8844	0.3571	0.5285	0.5049	3.7788	5.5925	5.3430
6	9.0884	4.2070	-3.3197	0.2359	0.5993	0.3109	2.5957	6.5945	3.4212
7	9.1472	4.2461	-3.4936	0.3585	1.1647	0.5356	3.9198	12.7331	5.8551
8	8.7232	3.9077	-3.7533	0.2347	0.7679	0.3266	2.6908	8.8035	3.7436
9	8.5729	4.1241	-4.0472	0.3441	0.8018	0.5176	4.0137	9.3524	6.0374
10	9.1648	4.5797	-3.1658	0.2562	0.8308	0.4035	2.7953	9.0647	4.4023

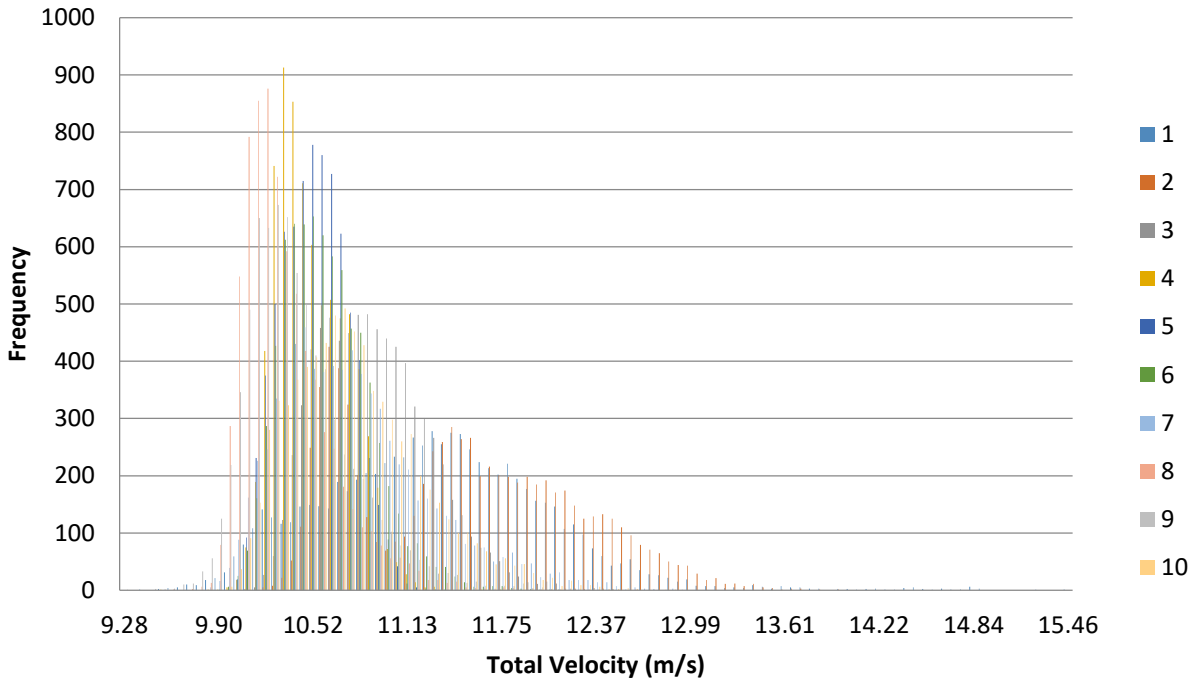


Figure 1. Velocity histogram for each interval (100 bins).

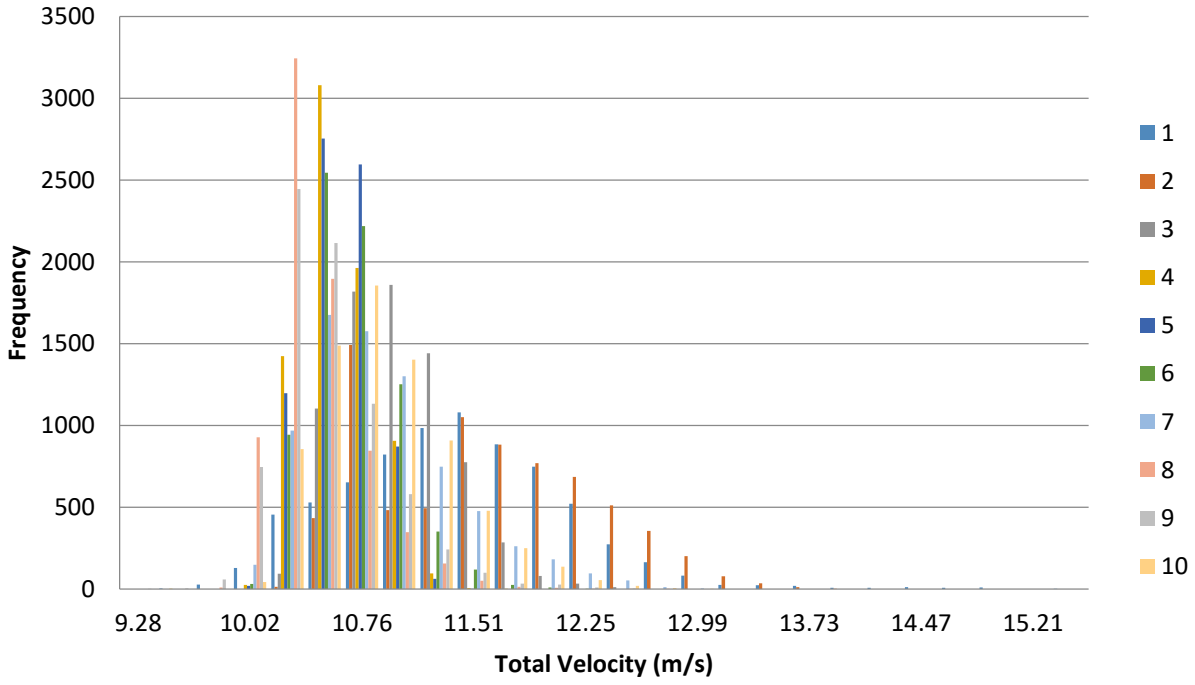
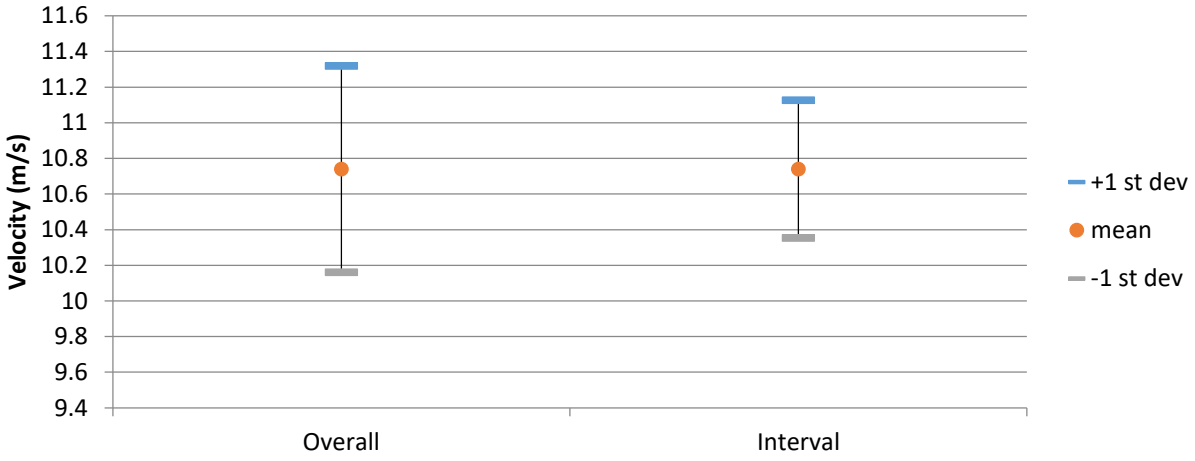
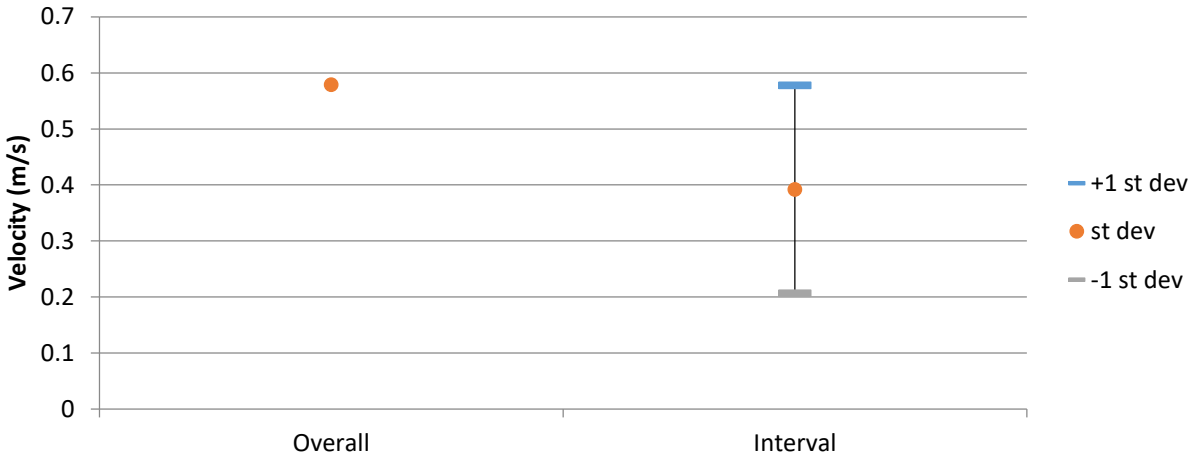


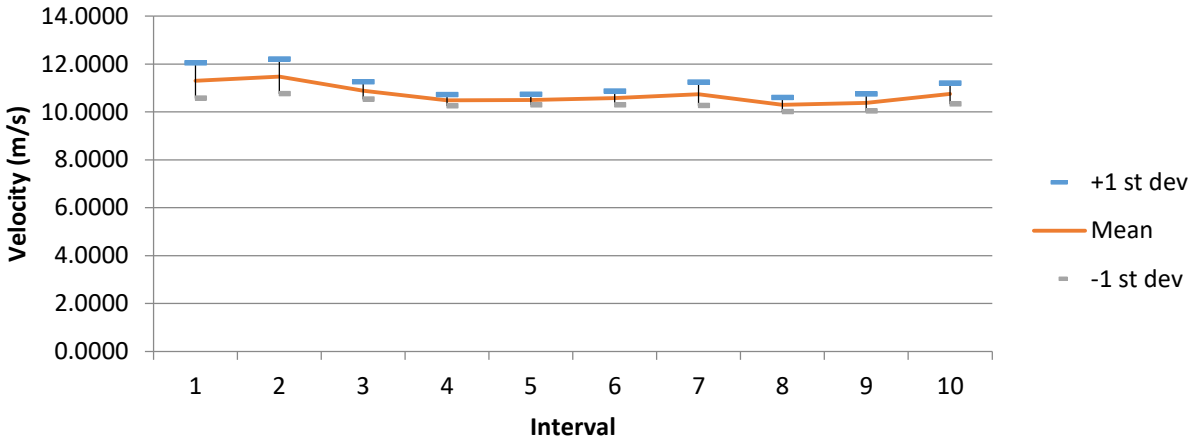
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 23
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: G5
First Sample Date: 09-Aug-13
First Sample Time: 09:24:26.953

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	13.3187	8.0214	9.9871	0.4184
u	10.7000	7.4700	8.9075	0.2606
v	9.2100	0.0095	4.2120	0.9113
w	2.3900	-3.8000	-1.2660	0.5758

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	10.8312	8.0214	9.5996	0.2507	2.8174
2	11.7661	8.9882	9.9654	0.2808	1.4075
3	10.5091	9.4187	9.9143	0.1395	1.6489
4	10.7772	9.4780	10.0028	0.1649	2.7722
5	11.0692	9.0397	9.7977	0.2716	2.9363
6	11.7059	9.4921	9.9759	0.2929	4.5551
7	13.3187	9.6711	10.7083	0.4878	3.7884
8	12.1999	8.8599	9.8765	0.3742	3.9200
9	11.6566	8.8749	9.8873	0.3876	3.3560
10	11.6086	9.2098	10.1433	0.3404	2.9943
		Average	9.9871	0.2990	3.0196
		St Dev	0.2904	0.1042	0.9198

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.2062	2.5811	-0.4070	0.3178	0.5336	0.4976	3.4522	5.7956	5.4052
2	9.0908	3.9107	-0.8274	0.3168	0.6414	0.5055	3.4847	7.0557	5.5611
3	8.9289	4.1604	-1.0179	0.1857	0.3766	0.2590	2.0802	4.2183	2.9006
4	8.9090	4.2677	-1.4876	0.1467	0.4288	0.2851	1.6468	4.8130	3.2003
5	8.8327	3.9641	-1.3692	0.1761	0.5698	0.3276	1.9941	6.4508	3.7087
6	8.8956	4.3009	-1.2401	0.1666	0.5569	0.3151	1.8725	6.2609	3.5422
7	8.9543	5.5299	-1.8396	0.1851	0.7444	0.4157	2.0670	8.3130	4.6425
8	8.7318	4.2900	-1.5307	0.1845	0.6365	0.5057	2.1130	7.2894	5.7918
9	8.6490	4.5918	-1.1739	0.1993	0.6382	0.4393	2.3042	7.3792	5.0789
10	8.8767	4.5236	-1.7670	0.1582	0.6869	0.3541	1.7823	7.7385	3.9886

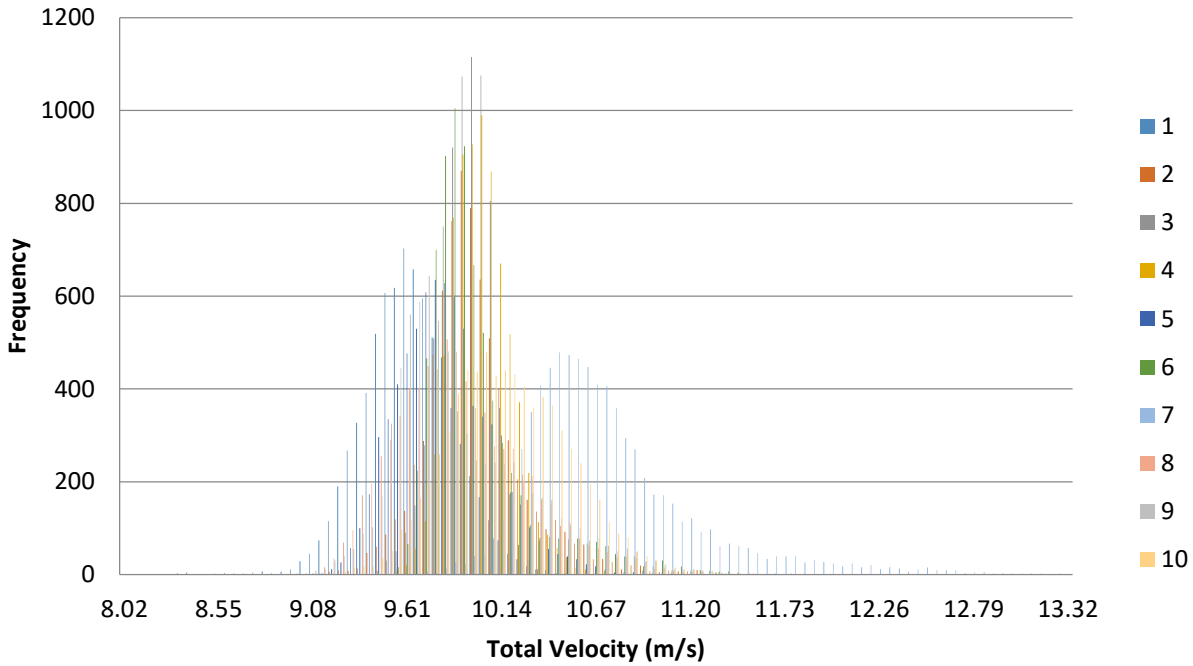


Figure 1. Velocity histogram for each interval (100 bins).

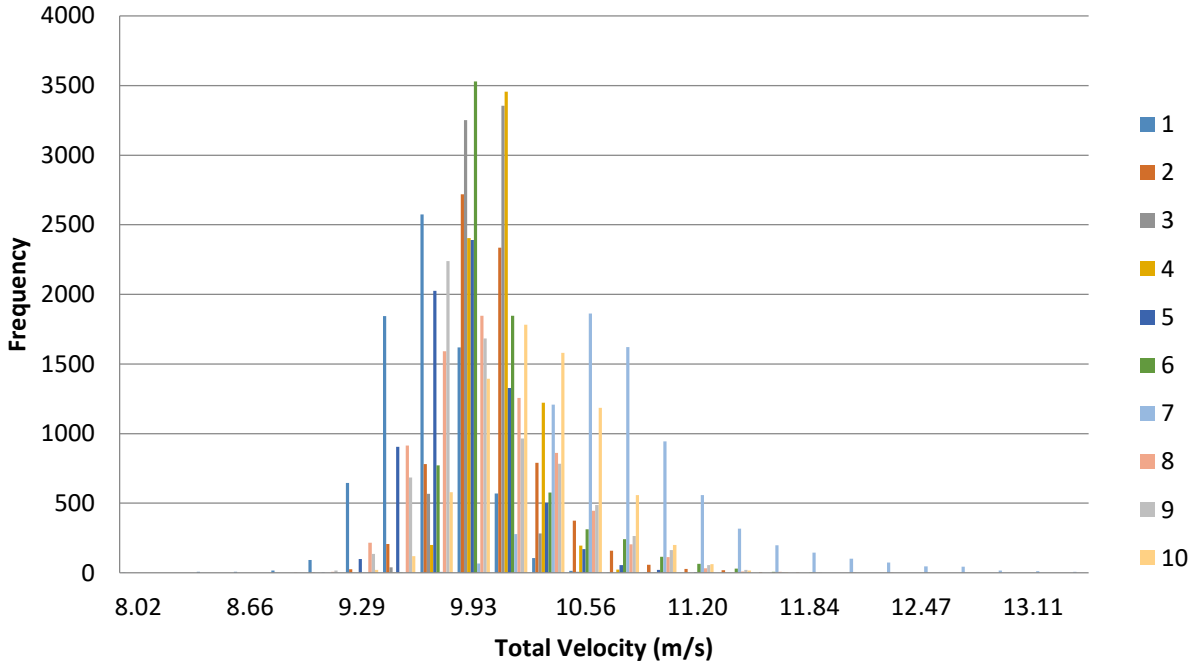
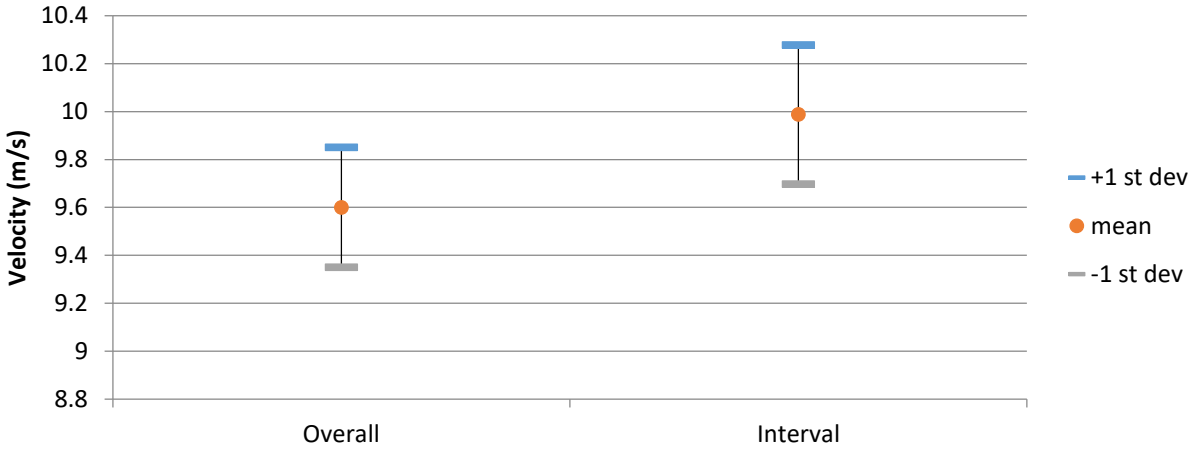
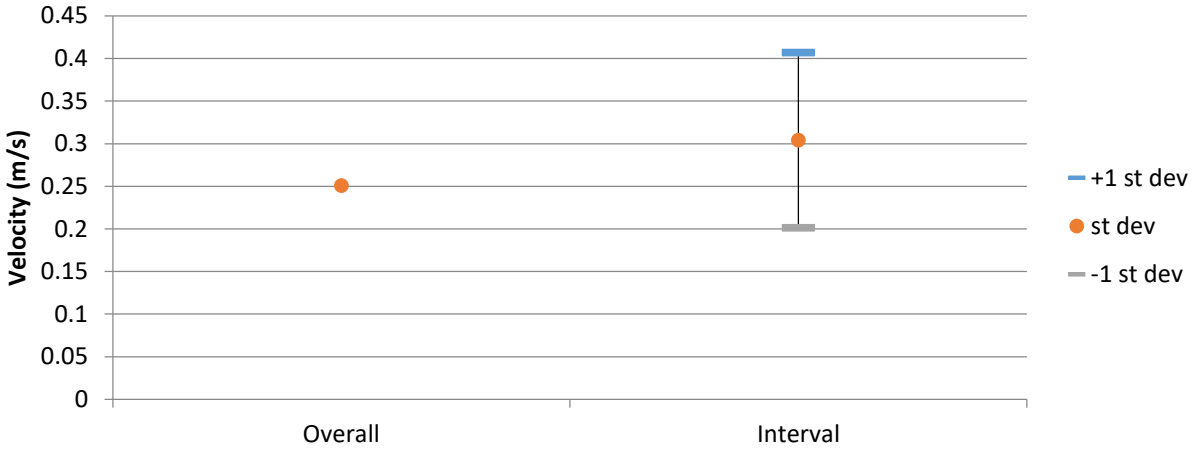


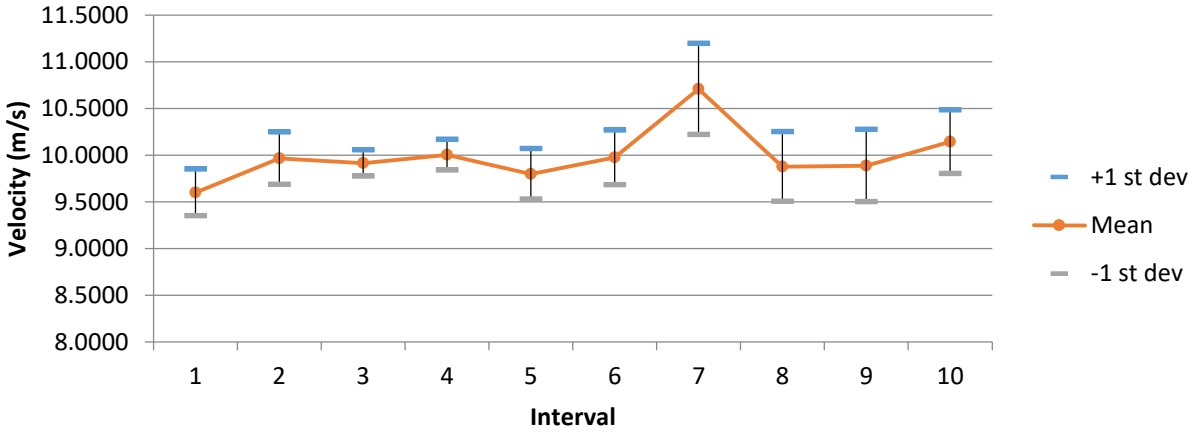
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 24
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: G4
First Sample Date: 09-Aug-13
First Sample Time: 09:26:15.390

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	14.2360	9.0674	10.8821	0.8205
u	9.9800	7.1500	8.9057	0.3558
v	10.1000	1.6800	5.6593	1.3492
w	1.0200	-4.9200	-2.2733	0.7994

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	14.0640	9.8508	11.0774	0.6237	5.6307	3	0.02 %
2	14.0392	9.8295	11.4925	0.8891	7.7365	82	0.66 %
3	14.1636	9.5411	11.2093	0.8449	7.5380	103	0.82 %
4	13.4624	9.4765	10.9359	0.7062	6.4575	0	0.00 %
5	13.3598	9.6292	11.2847	0.5865	5.1975	3	0.02 %
6	14.2360	9.0793	11.4644	0.8969	7.8232	10	0.08 %
7	12.4297	9.5777	10.4838	0.4408	4.2046	0	0.00 %
8	12.7379	9.3345	10.3510	0.4366	4.2183	0	0.00 %
9	13.0070	9.0674	10.5781	0.5423	5.1271	8	0.06 %
10	12.2607	9.2100	9.9562	0.3282	3.2962	0	0.00 %
		Average	10.8833	0.6295	5.7230		
		St dev	0.4912	0.1909	1.5296		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.1856	5.6706	-2.3019	0.2040	1.0190	0.4351	2.2208	11.0932	4.7364
2	9.1063	6.5041	-2.2932	0.3819	1.2189	0.8651	4.1935	13.3857	9.4997
3	8.7549	6.7762	-1.3390	0.4190	0.9912	0.9192	4.7864	11.3217	10.4989
4	8.8954	6.1288	-1.3407	0.4237	0.9060	0.7773	4.7630	10.1849	8.7387
5	8.9788	6.2006	-2.7066	0.2717	0.9427	0.5795	3.0260	10.4997	6.4541
6	8.9562	6.5478	-2.6944	0.4155	1.2139	0.4951	4.6389	13.5541	5.5275
7	8.8623	5.0123	-2.3461	0.1879	0.8312	0.4592	2.1204	9.3796	5.1813
8	8.8045	4.6585	-2.6931	0.1863	0.8213	0.3886	2.1160	9.3278	4.4140
9	8.6974	5.3948	-2.4710	0.3103	0.9815	0.5240	3.5674	11.2848	6.0247
10	8.8162	3.7250	-2.5356	0.3153	0.8365	0.6349	3.5759	9.4882	7.2020

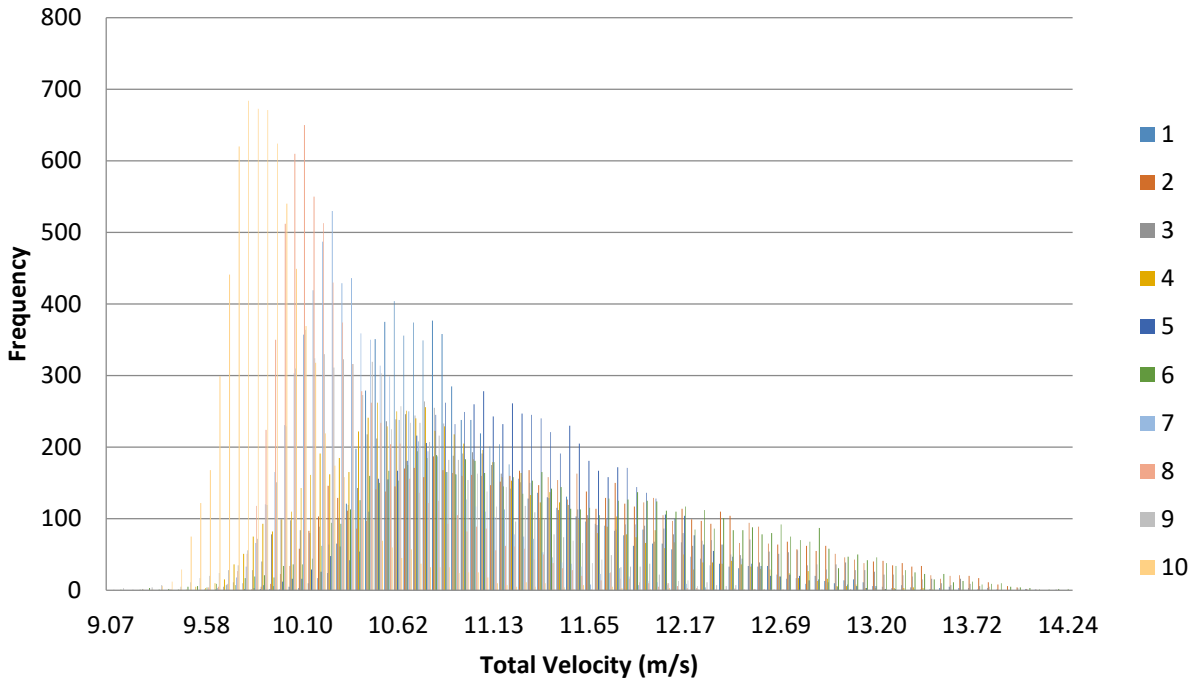


Figure 1. Velocity histogram for each interval (100 bins).

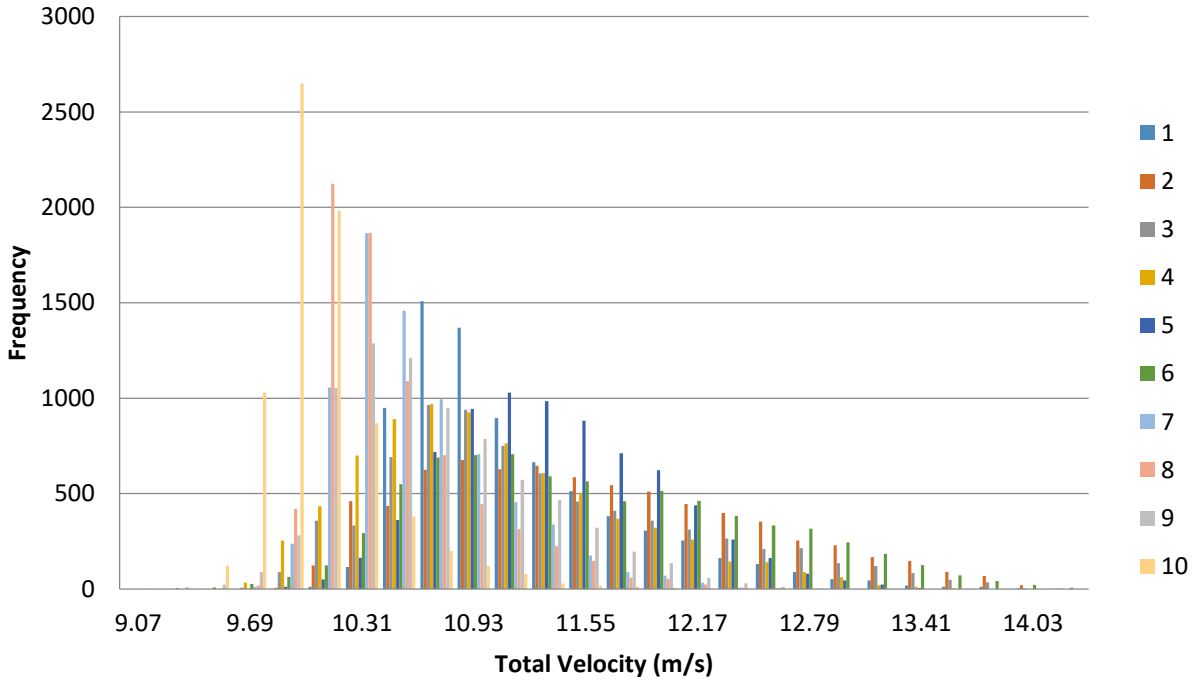
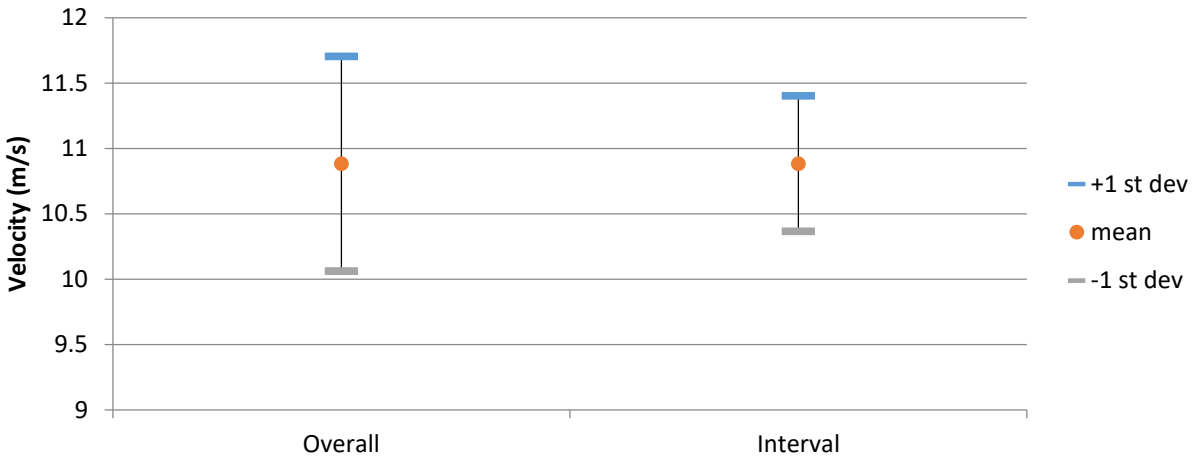
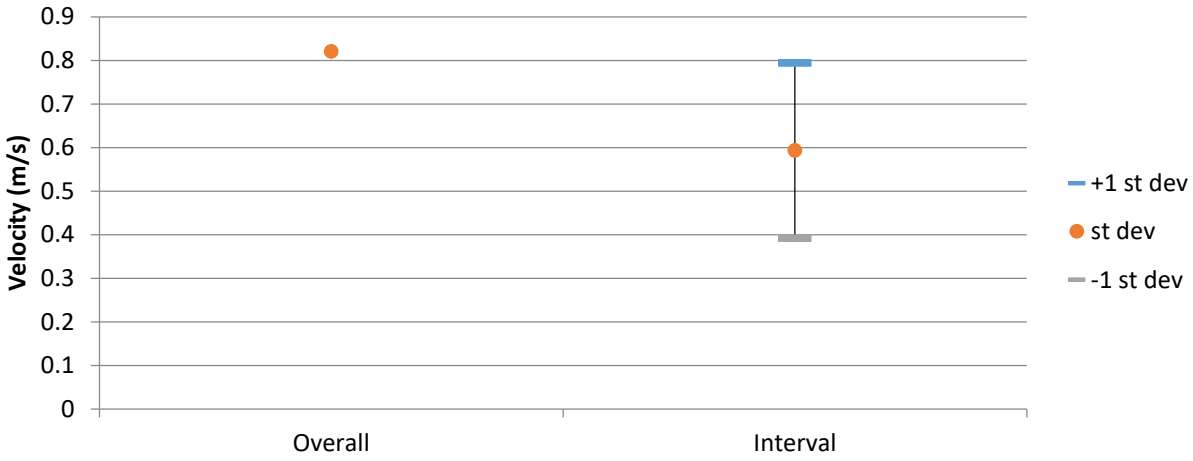


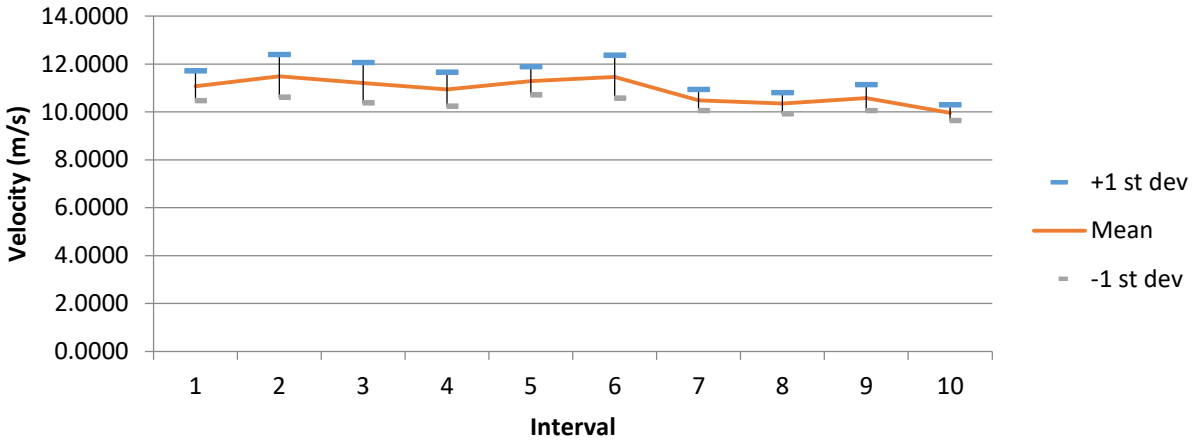
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 25
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: G2
First Sample Date: 09-Aug-13
First Sample Time: 09:28:18.109

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	13.9280	9.9457	11.3452	0.4859
u	11.5000	7.5700	9.2806	0.3443
v	8.9200	0.4800	4.2528	1.2083
w	-2.2300	-7.1600	-4.7754	0.5919

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	13.3488	10.1884	11.2586	0.4713	4.1864	1	0.01 %
2	13.6935	10.1972	11.6720	0.4350	3.7267	1	0.01 %
3	13.8764	10.0134	11.4433	0.5218	4.5603	0	0.00 %
4	13.4480	10.2953	11.1627	0.4313	3.8640	0	0.00 %
5	13.7149	9.9457	11.2764	0.4763	4.2236	0	0.00 %
6	13.0538	10.4159	11.0360	0.2608	2.3632	0	0.00 %
7	13.1340	10.5047	11.2120	0.3486	3.1093	0	0.00 %
8	13.2194	10.0723	11.2096	0.3926	3.5026	0	0.00 %
9	13.6378	10.1175	11.4735	0.5268	4.5913	1	0.01 %
10	13.9280	10.3995	11.7077	0.4496	3.8400	1	0.01 %
		Average	11.3452	0.4314	3.7967		
		St dev	0.2101	0.0766	0.6460		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.1497	4.0619	-4.9785	0.3702	1.2032	0.6273	4.0462	13.1506	6.8563
2	9.4343	4.9296	-4.6523	0.4444	0.8935	0.6906	4.7099	9.4712	7.3202
3	9.2296	4.4210	-4.9022	0.3676	1.3812	0.6460	3.9832	14.9647	6.9992
4	9.4636	3.5478	-4.5992	0.3531	1.0416	0.5325	3.7309	11.0068	5.6267
5	9.2429	4.1046	-4.7863	0.3479	1.3226	0.5712	3.7640	14.3094	6.1803
6	9.3166	3.5709	-4.6652	0.1844	0.6276	0.3441	1.9788	6.7359	3.6930
7	9.2312	3.8311	-5.0130	0.1820	0.8007	0.3647	1.9714	8.6738	3.9512
8	9.1886	3.7926	-5.0866	0.2919	0.8627	0.5408	3.1770	9.3891	5.8860
9	9.1916	4.8095	-4.7376	0.2876	1.2310	0.5103	3.1290	13.3928	5.5515
10	9.3582	5.4587	-4.3332	0.3614	0.8107	0.5795	3.8617	8.6627	6.1928

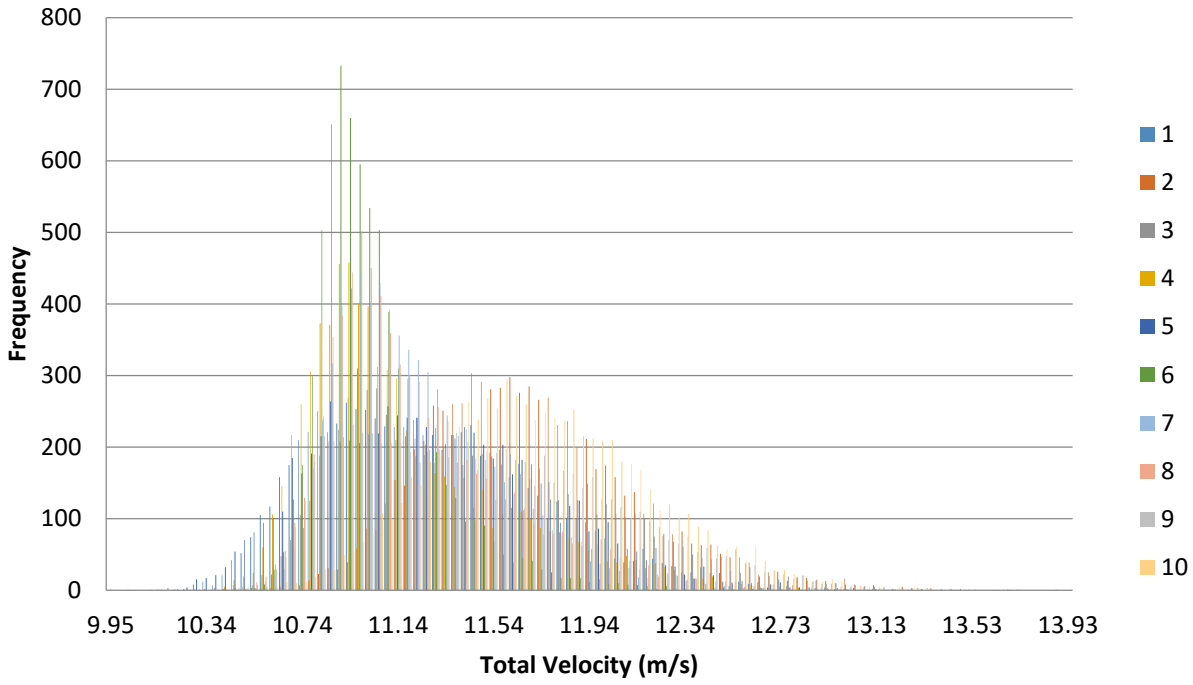


Figure 1. Velocity histogram for each interval (100 bins).

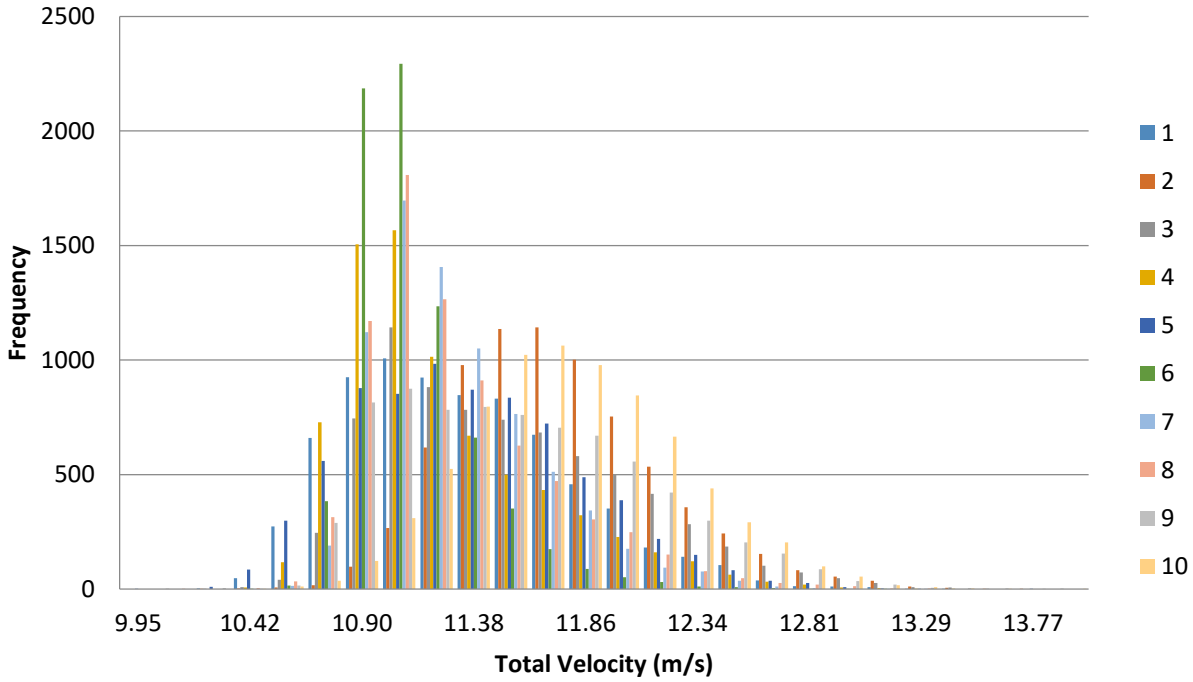
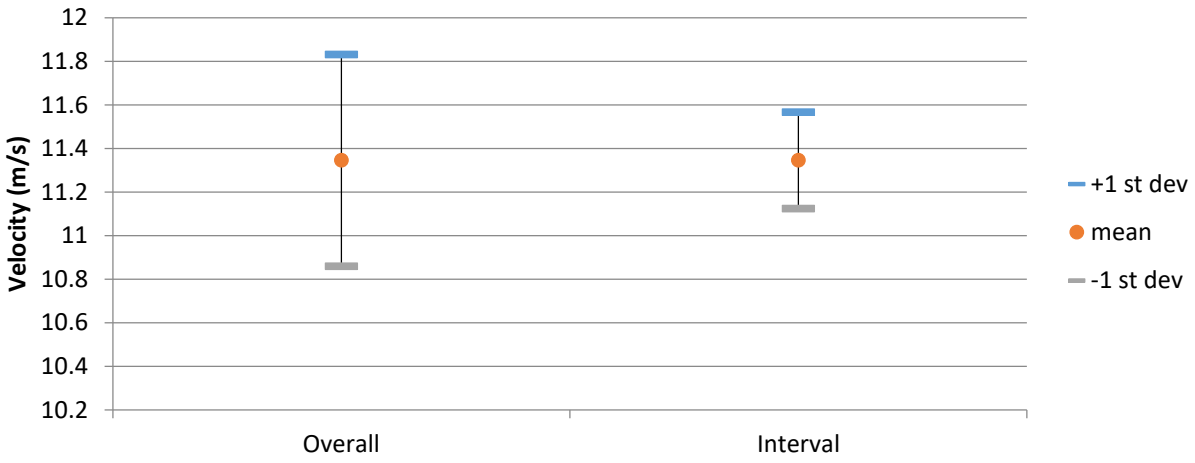
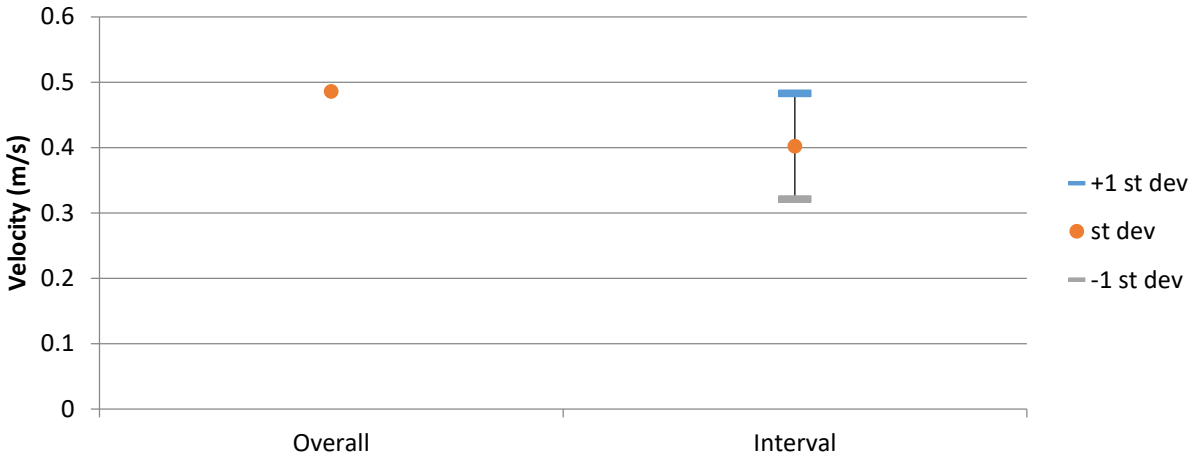


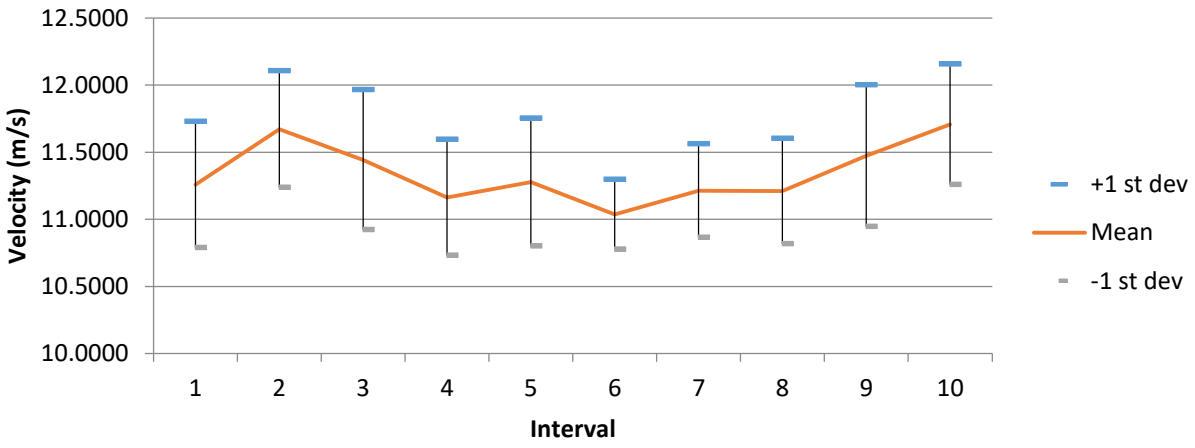
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 26
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: D2
First Sample Date: 09-Aug-13
First Sample Time: 09:31:47.140

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	16.1187	10.6064	11.8816	0.4517
u	13.0000	8.2500	10.3764	0.5796
v	0.4290	-8.3200	-3.0931	1.2176
w	-1.3200	-7.6000	-4.6380	0.9001

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	16.1187	11.1935	11.9928	0.4825	2.5010
2	13.6415	11.4798	12.3872	0.3098	2.8845
3	12.9969	10.6881	12.0030	0.3462	2.5869
4	12.9631	10.9018	11.7904	0.3050	3.0289
5	13.4964	10.8559	11.8989	0.3604	3.6816
6	14.8171	10.8422	12.0878	0.4450	3.7301
7	13.4980	10.8838	12.0231	0.4485	2.9079
8	12.9672	10.7273	11.5913	0.3371	1.7618
9	12.5256	10.6064	11.3803	0.2005	2.3952
10	12.7289	10.9276	11.6612	0.2793	2.9578
		Average	11.8816	0.3514	2.8436
		St Dev	0.2864	0.0866	0.5564

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.4189	-3.5476	-4.6801	0.4512	0.7750	0.4626	4.3310	7.4379	4.4399
2	10.3366	-4.5194	-5.0250	0.4748	0.5298	0.7167	4.5933	5.1259	6.9334
3	10.0166	-3.5815	-5.3871	0.4656	1.1752	0.6433	4.6481	11.7330	6.4220
4	10.1220	-2.8339	-5.1592	0.6734	0.7019	1.0289	6.6527	6.9339	10.1653
5	10.7703	-2.4309	-4.2630	0.5991	0.7129	0.8744	5.5624	6.6192	8.1183
6	10.8683	-3.5625	-3.5716	0.4554	1.4197	0.7234	4.1906	13.0629	6.6561
7	10.6635	-3.8162	-3.8473	0.4364	0.9694	0.7414	4.0928	9.0911	6.9522
8	10.5676	-1.8427	-4.3113	0.5120	0.5655	0.4825	4.8451	5.3511	4.5657
9	10.0369	-1.5729	-5.0713	0.3781	0.4761	0.5009	3.7671	4.7438	4.9911
10	9.9631	-3.2236	-5.0643	0.3145	0.6647	0.4670	3.1568	6.6713	4.6870

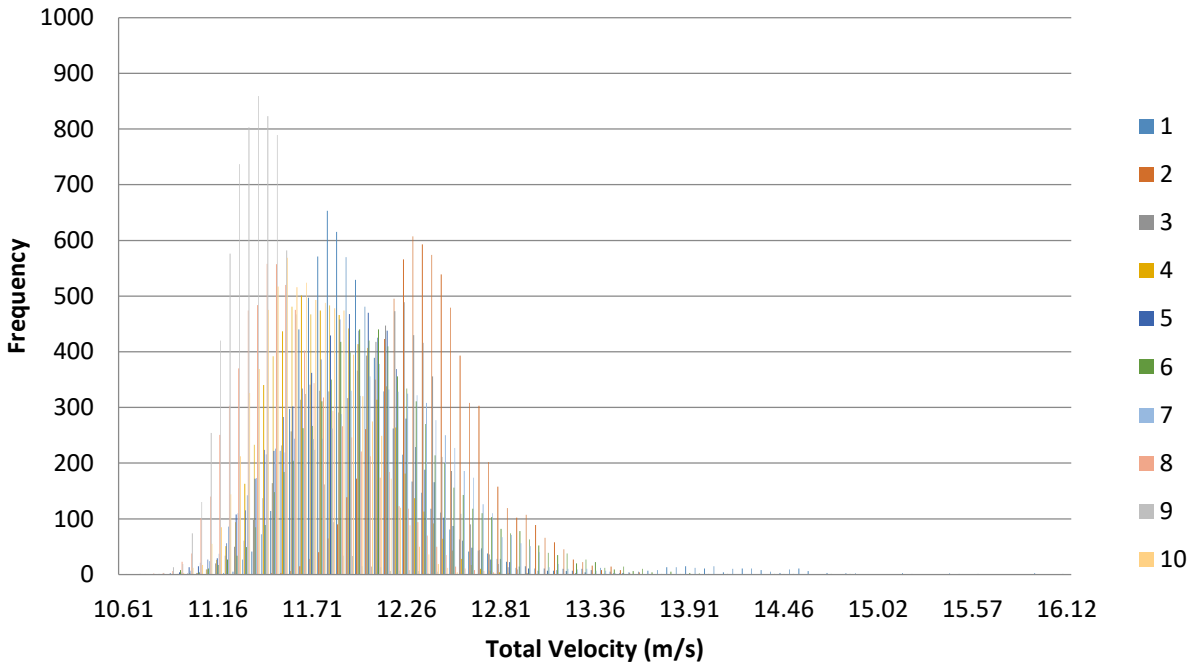


Figure 1. Velocity histogram for each interval (100 bins).

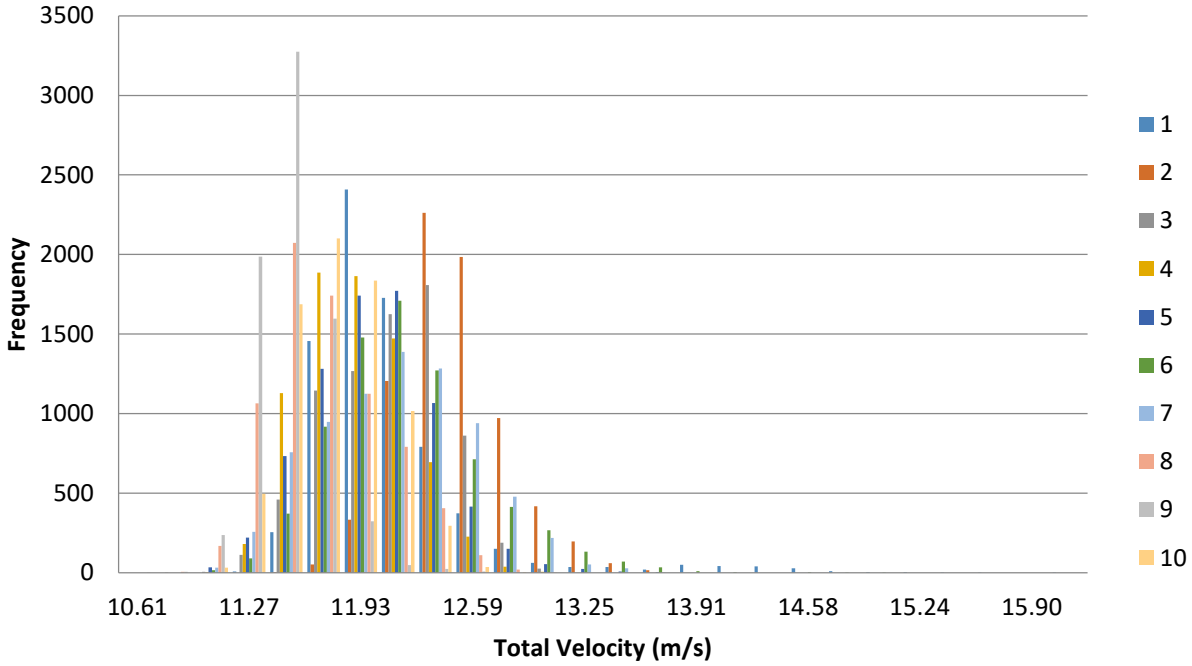
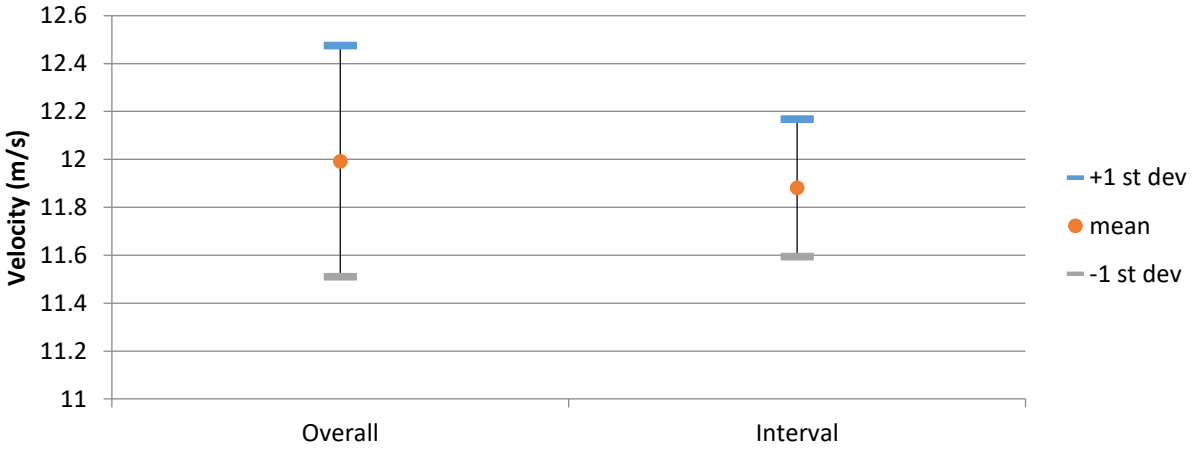
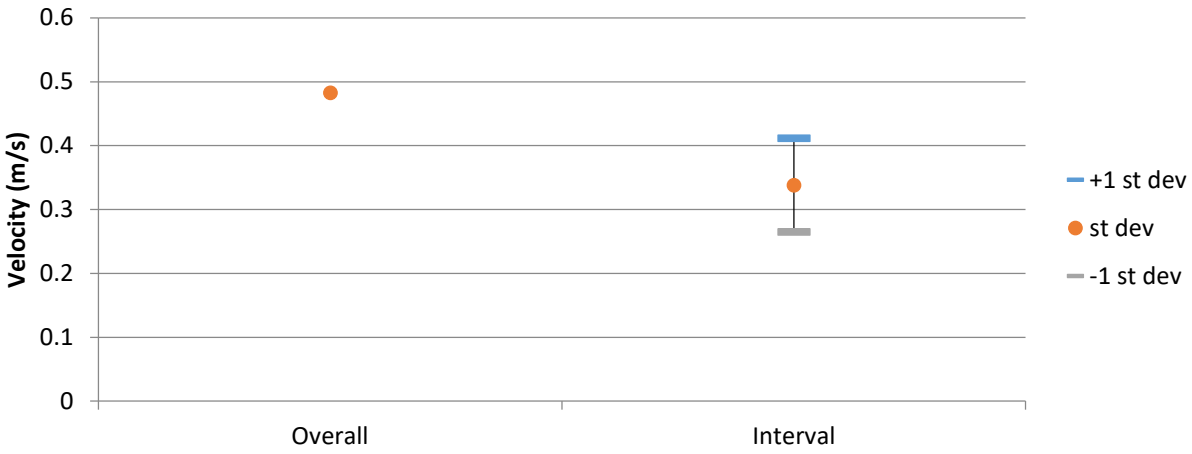


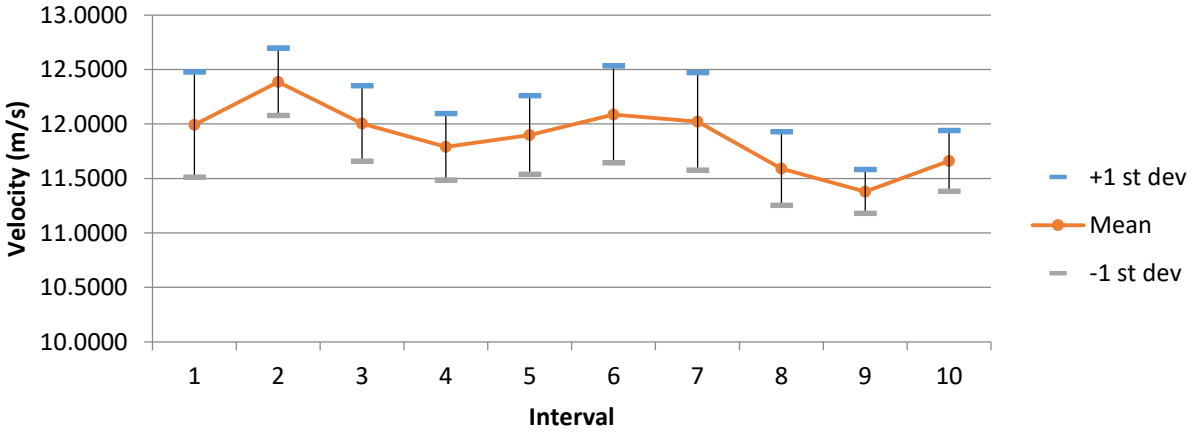
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 27
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: C2
First Sample Date: 09-Aug-13
First Sample Time: 09:34:07.718

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	13.4925	9.2297	10.8296	0.4387
u	11.6000	7.1600	9.2925	0.5711
v	-0.6820	-7.3000	-4.1007	0.8331
w	0.0194	-5.9100	-3.5463	0.8429

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	13.2940	9.2297	10.8376	0.2995	4.2307
2	13.1180	9.5587	11.0023	0.4655	3.0641
3	11.9259	9.5134	10.8414	0.3322	3.9995
4	12.8130	9.3426	10.7625	0.4304	2.4250
5	11.4214	9.6506	10.4938	0.2545	3.1823
6	12.0805	9.8346	10.8350	0.3448	2.2966
7	11.5142	9.6439	10.4572	0.2402	3.9113
8	12.7932	9.8237	10.9083	0.4267	2.6423
9	11.9785	9.8326	10.8687	0.2872	4.9449
10	13.4925	9.8778	11.2891	0.5582	3.3603
		Average	10.8296	0.3639	3.4057
		St Dev	0.2369	0.1028	0.8125

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.5374	-4.1943	-2.8190	0.4807	0.6821	0.5876	5.0400	7.1521	6.1607
2	9.6914	-4.2735	-2.8214	0.4143	0.7716	0.5956	4.2754	7.9613	6.1452
3	9.7302	-3.7409	-2.6744	0.4243	0.7504	1.0402	4.3603	7.7125	10.6908
4	9.2986	-4.1080	-3.3476	0.4241	0.8721	0.7274	4.5606	9.3789	7.8231
5	8.7167	-3.8951	-4.2400	0.5672	0.7593	0.3952	6.5070	8.7109	4.5333
6	9.0540	-4.3064	-3.9752	0.5363	0.7914	0.5283	5.9232	8.7415	5.8354
7	8.8102	-3.2409	-4.5196	0.3643	0.7037	0.4828	4.1346	7.9877	5.4803
8	9.2103	-4.4888	-3.6259	0.5262	0.6759	0.5598	5.7128	7.3385	6.0775
9	9.3132	-3.9717	-3.9116	0.2978	0.4947	0.2591	3.1973	5.3119	2.7815
10	9.5626	-4.7876	-3.5280	0.5290	0.7258	0.3736	5.5319	7.5897	3.9068

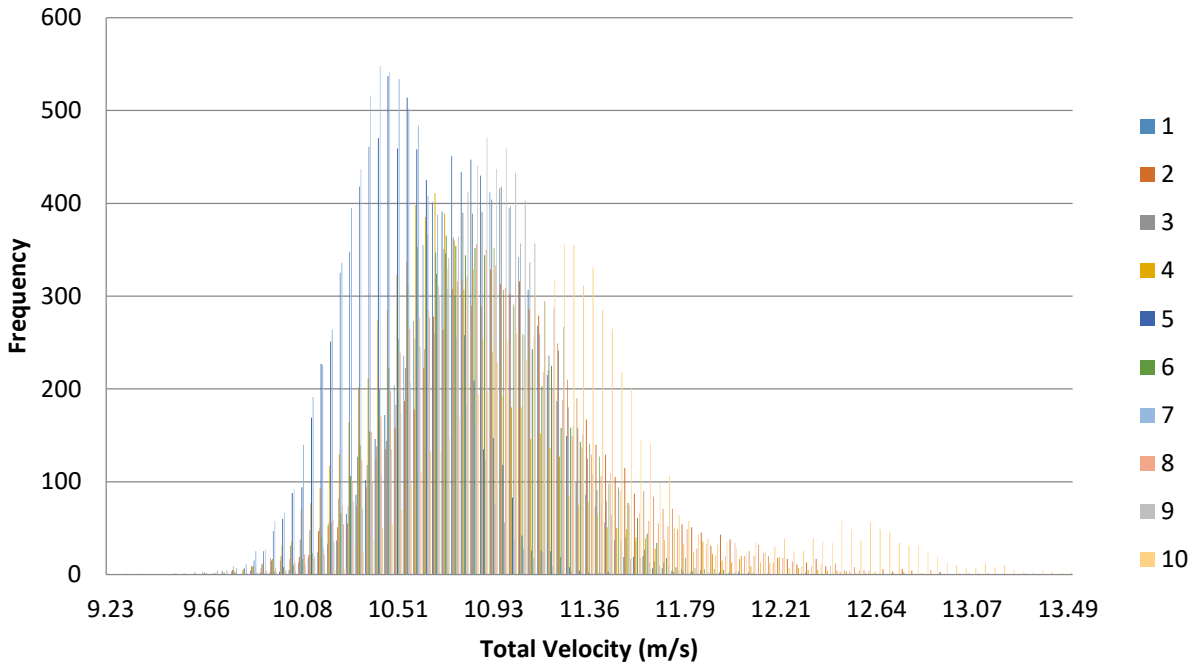


Figure 1. Velocity histogram for each interval (100 bins).

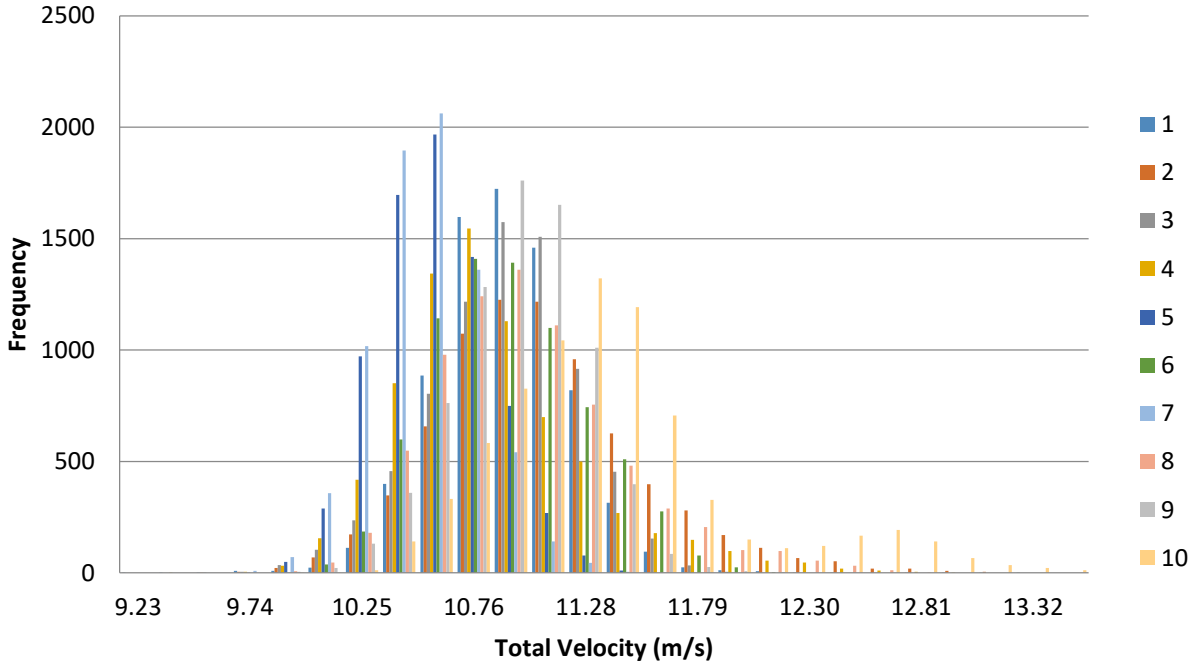
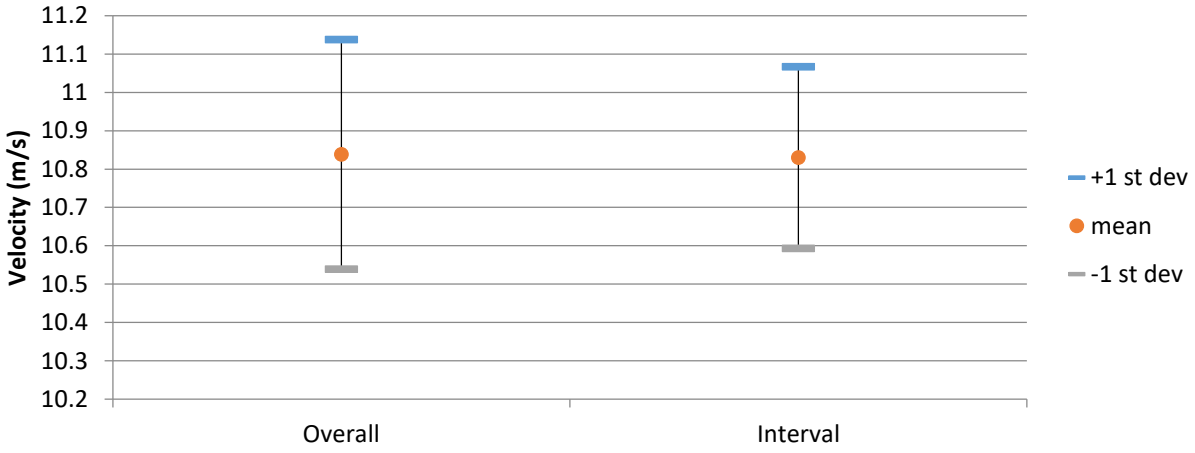
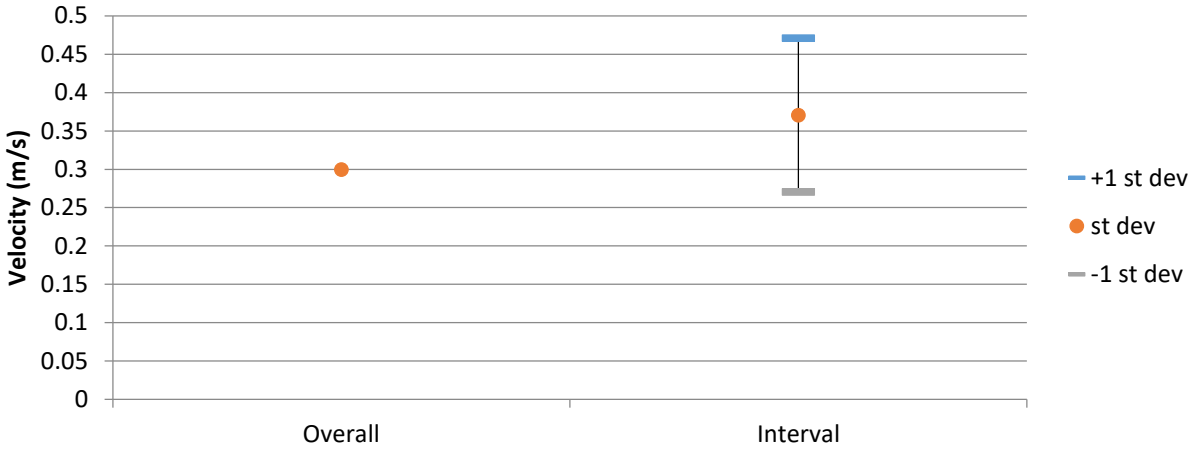


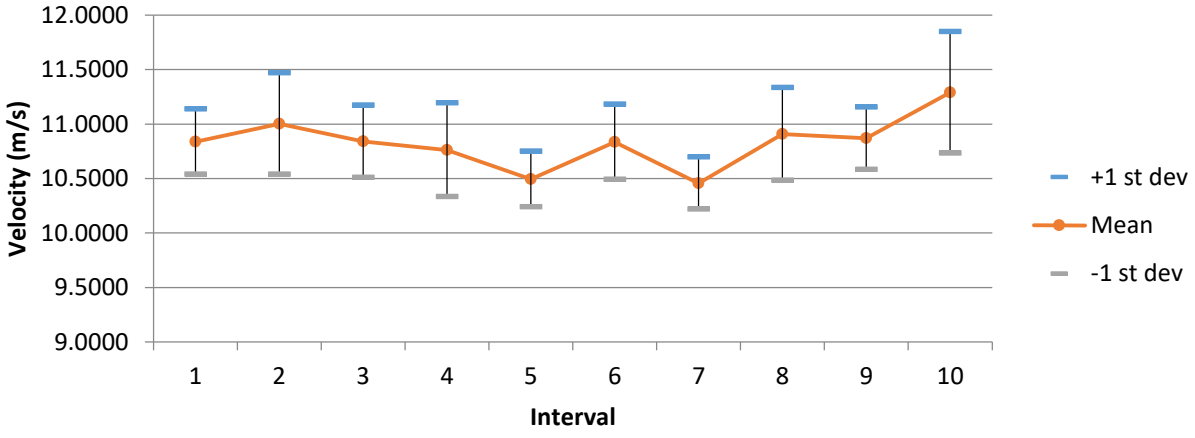
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 28
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: B2
First Sample Date: 09-Aug-13
First Sample Time: 09:36:35.843

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.4545	7.7904	9.5818	0.5422
u	10.5000	5.5900	7.9649	0.6143
v	-0.7380	-7.2700	-4.5364	0.9284
w	1.0500	-5.9000	-2.4367	0.9544

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	10.2388	8.6573	9.3673	0.2196	2.3446	0	0.00 %
2	10.2077	8.5455	9.1508	0.2008	2.1939	0	0.00 %
3	11.3283	8.5081	9.5688	0.4613	4.8205	0	0.00 %
4	12.0880	7.9495	9.4864	0.5410	5.7027	0	0.00 %
5	12.4545	7.7904	9.6228	0.5614	5.8343	0	0.00 %
6	11.3013	8.0056	9.2757	0.4965	5.3529	0	0.00 %
7	11.1347	8.2524	9.5486	0.4118	4.3130	8	0.06 %
8	10.9187	8.4500	10.0913	0.3334	3.3043	0	0.00 %
9	11.0989	8.4392	10.0559	0.4219	4.1956	0	0.00 %
10	11.3241	8.3860	9.6509	0.7060	7.3150	0	0.00 %
		Average	9.5819	0.4354	4.5377		
		St dev	0.2875	0.1474	1.5326		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	7.6774	-4.3602	-3.1001	0.3623	0.1864	0.2545	4.7189	2.4277	3.3153
2	7.2639	-4.4396	-3.3149	0.3642	0.2168	0.3694	5.0138	2.9847	5.0848
3	7.8868	-4.5975	-2.7416	0.6208	0.4953	0.5382	7.8718	6.2805	6.8239
4	7.8758	-4.0373	-2.9766	0.6767	1.0376	1.2500	8.5923	13.1746	15.8716
5	8.5187	-3.6805	-2.1920	0.5279	0.7609	1.0658	6.1974	8.9315	12.5109
6	8.2837	-3.6016	-1.3794	0.4295	1.1875	1.0936	5.1843	14.3355	13.2013
7	7.9456	-4.7683	-2.1272	0.4947	0.7294	0.4170	6.2262	9.1800	5.2479
8	8.1873	-5.5008	-2.0506	0.3274	0.4236	0.4040	3.9994	5.1744	4.9344
9	8.3448	-5.2788	-1.8033	0.3135	0.4846	0.4600	3.7563	5.8068	5.5130
10	7.6647	-5.0998	-2.6810	0.6870	0.7268	0.8339	8.9635	9.4818	10.8798

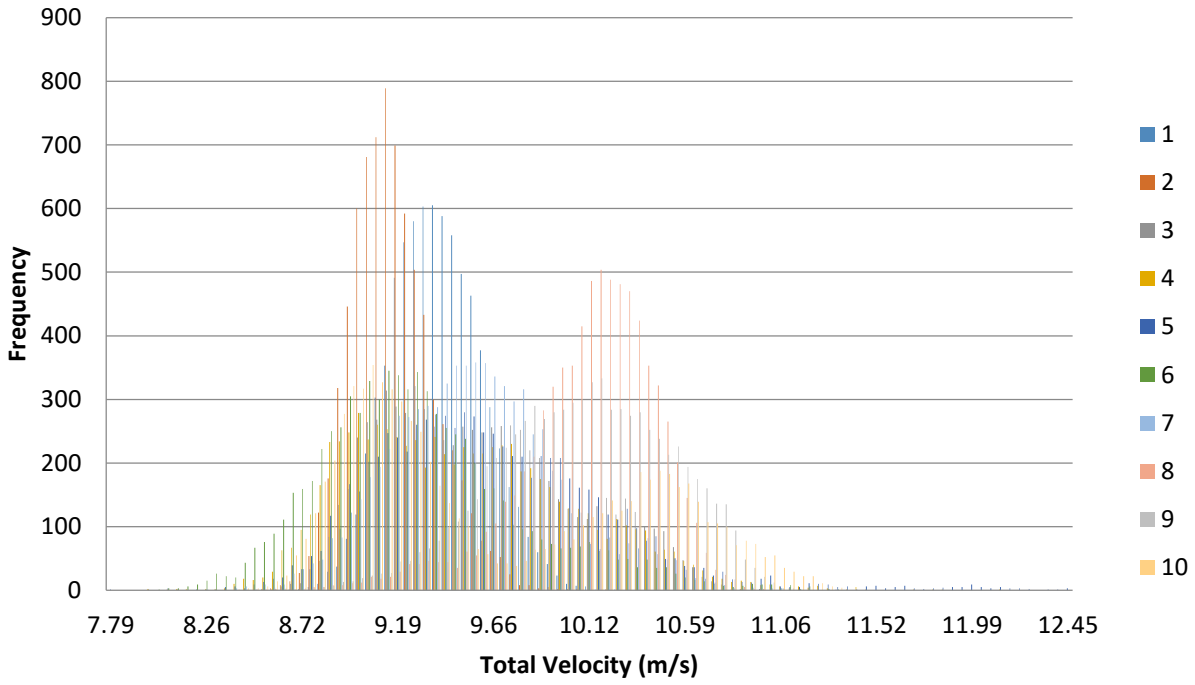


Figure 1. Velocity histogram for each interval (100 bins).

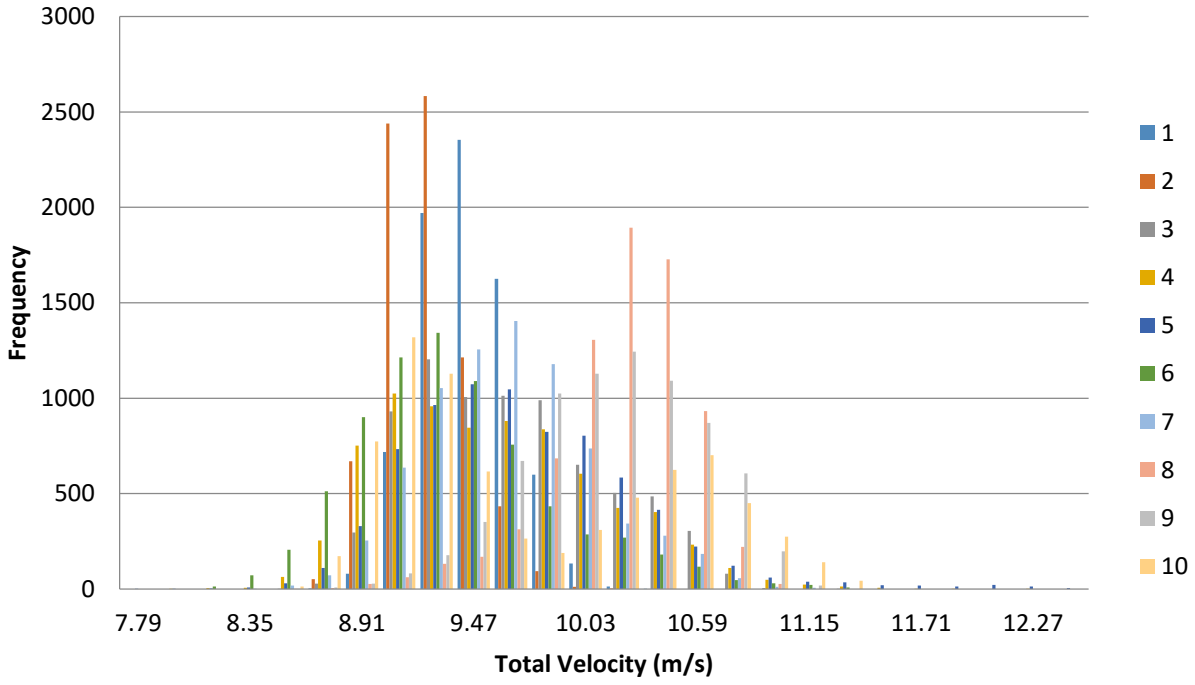
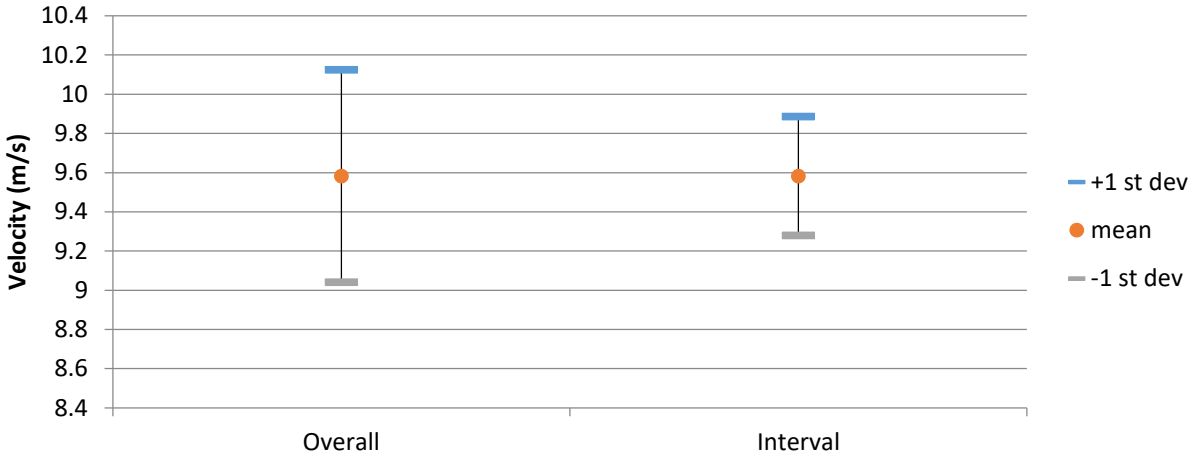
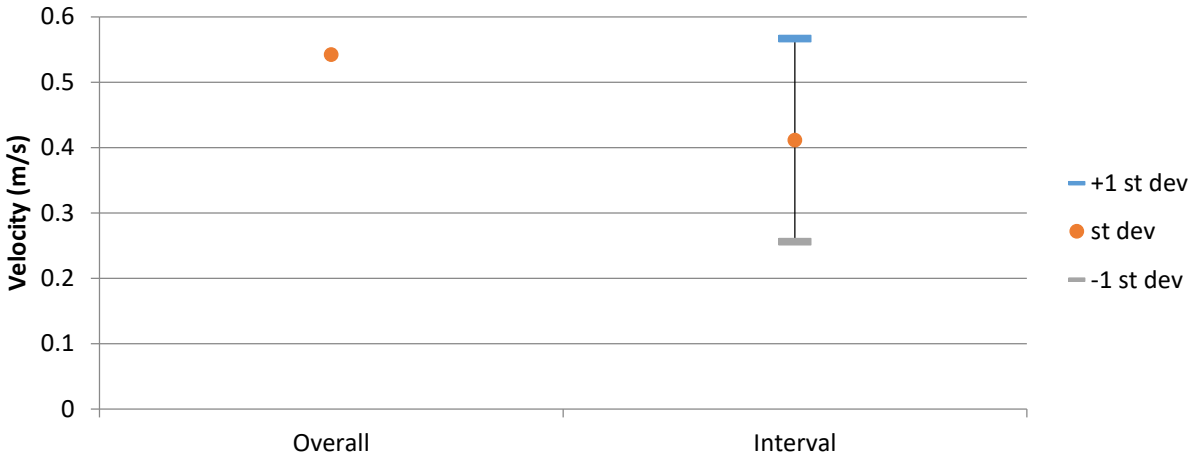


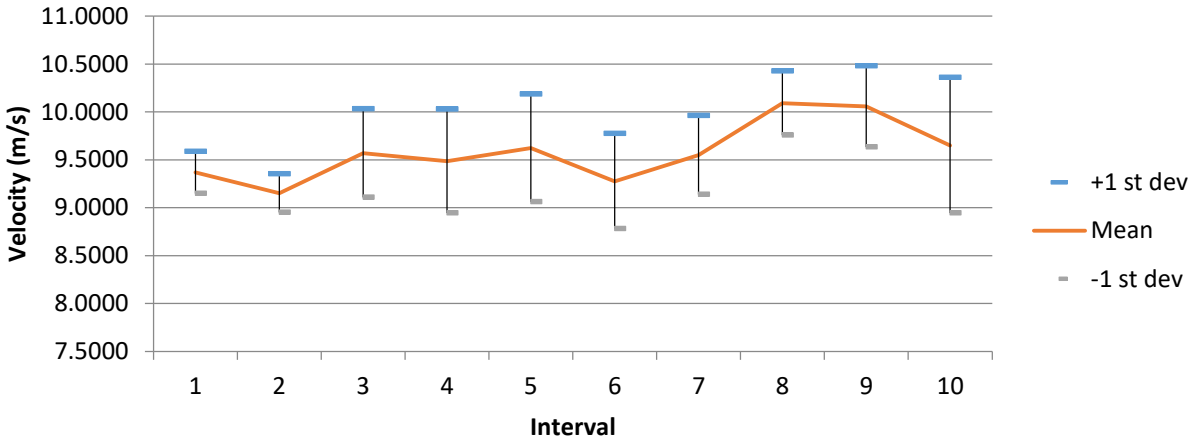
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 29
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: A2
First Sample Date: 09-Aug-13
First Sample Time: 09:38:39.828

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.5788	6.6611	9.3180	0.5195
u	9.1100	4.4900	7.1203	0.6364
v	-4.0700	-7.5900	-5.7312	0.4556
w	1.6600	-3.5600	-1.5404	0.7515

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	10.3662	8.2222	9.4608	0.3720	3.9318	0	0.00 %
2	10.6797	7.9999	9.3806	0.4005	4.2696	0	0.00 %
3	10.3619	7.9493	9.4719	0.4229	4.4643	0	0.00 %
4	10.6901	7.7470	9.0369	0.5052	5.5905	166	1.33 %
5	10.5596	8.0343	9.1003	0.5063	5.5636	450	3.60 %
6	10.5981	7.7880	9.5103	0.4600	4.8365	113	0.90 %
7	10.2828	8.8224	9.6909	0.1860	1.9195	0	0.00 %
8	11.4399	7.4663	9.3165	0.5900	6.3326	468	3.74 %
9	11.5788	6.6611	9.1513	0.6228	6.8051	115	0.92 %
10	10.4484	6.8364	8.9822	0.5163	5.7481	1334	10.67 %
		Average	9.3102	0.4582	4.9462		
		St dev	0.2214	0.1177	1.3307		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	7.6258	-5.2480	-1.8606	0.3983	0.3380	0.4646	5.2224	4.4320	6.0927
2	7.4614	-5.2235	-2.1693	0.4508	0.4053	0.3526	6.0422	5.4314	4.7259
3	7.3462	-5.5633	-2.1192	0.4908	0.3132	0.3864	6.6816	4.2639	5.2599
4	6.7535	-5.8999	-0.8773	0.5230	0.4269	0.5268	7.7448	6.3209	7.7997
5	6.6752	-6.0259	-0.9986	0.6361	0.3890	0.8063	9.5287	5.8277	12.0784
6	7.2666	-5.8003	-1.8470	0.5577	0.3149	0.6231	7.6745	4.3332	8.5743
7	7.5009	-5.8240	-1.9038	0.1666	0.1963	0.2753	2.2217	2.6174	3.6704
8	6.9524	-5.9632	-1.3747	0.7270	0.3702	0.8331	10.4564	5.3250	11.9834
9	6.9092	-5.8498	-1.0871	0.5995	0.3879	0.6970	8.6762	5.6145	10.0874
10	6.5670	-6.0015	-1.0128	0.5459	0.3912	0.5713	8.3127	5.9568	8.6995

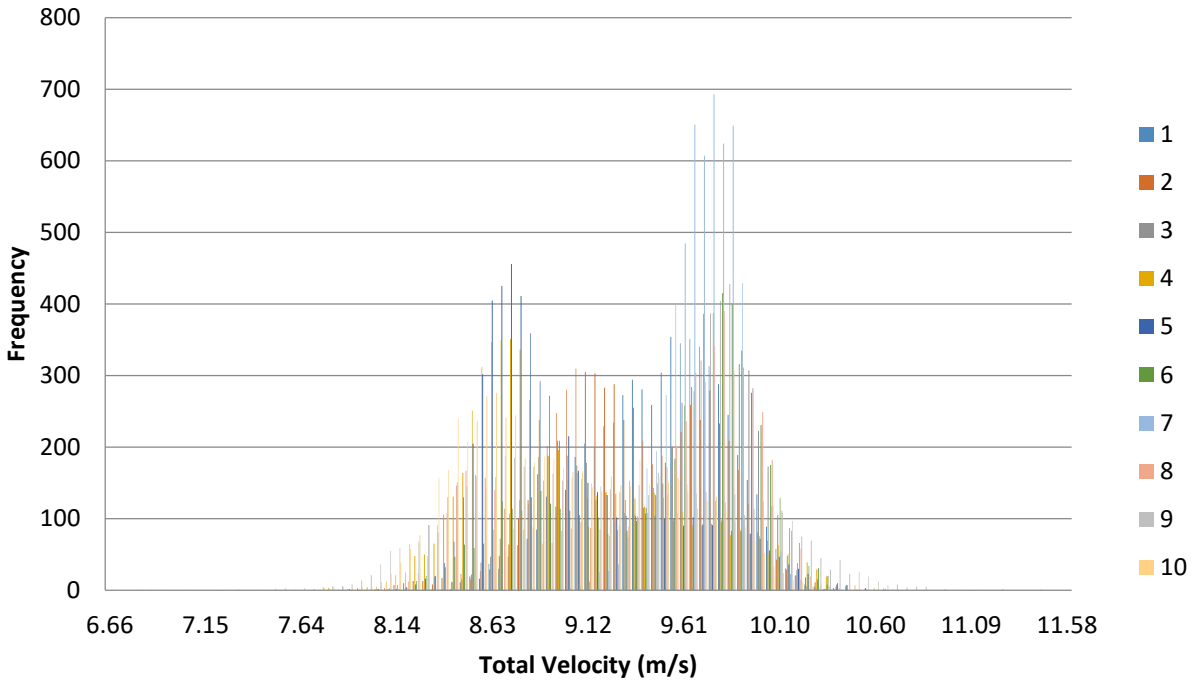


Figure 1. Velocity histogram for each interval (100 bins).

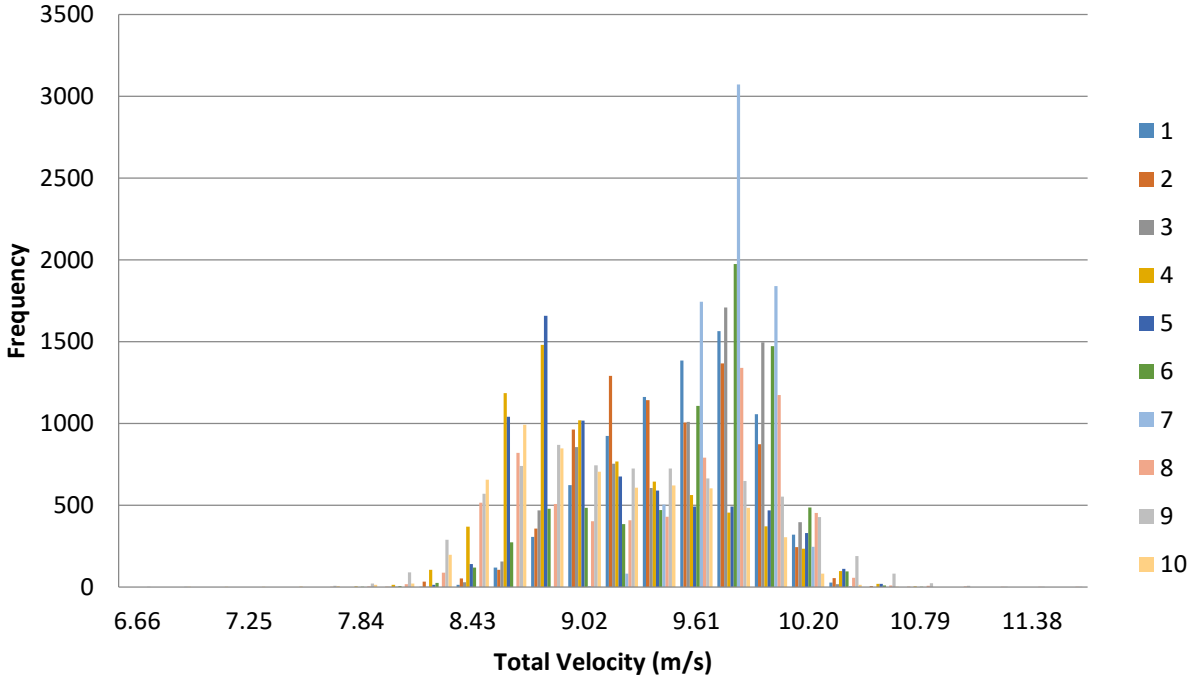
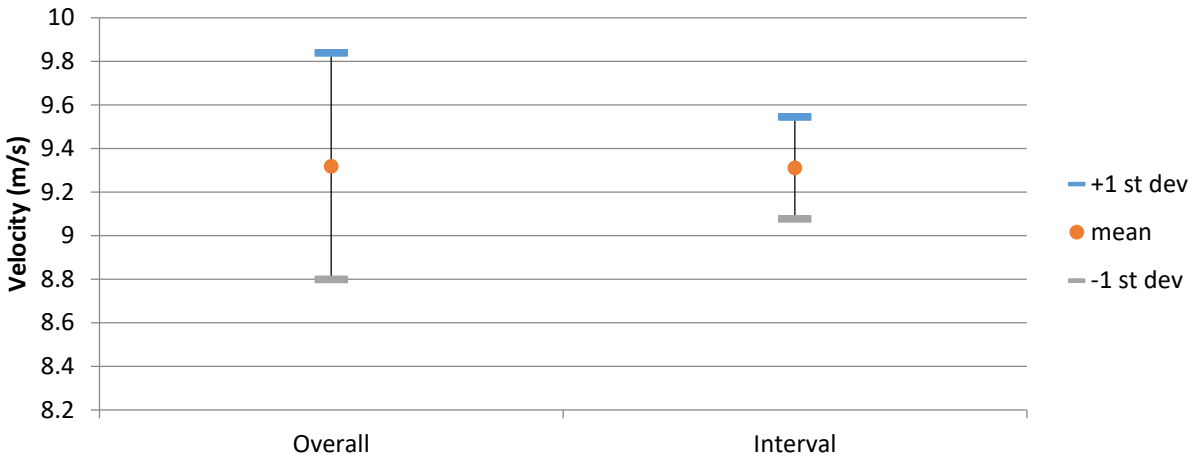
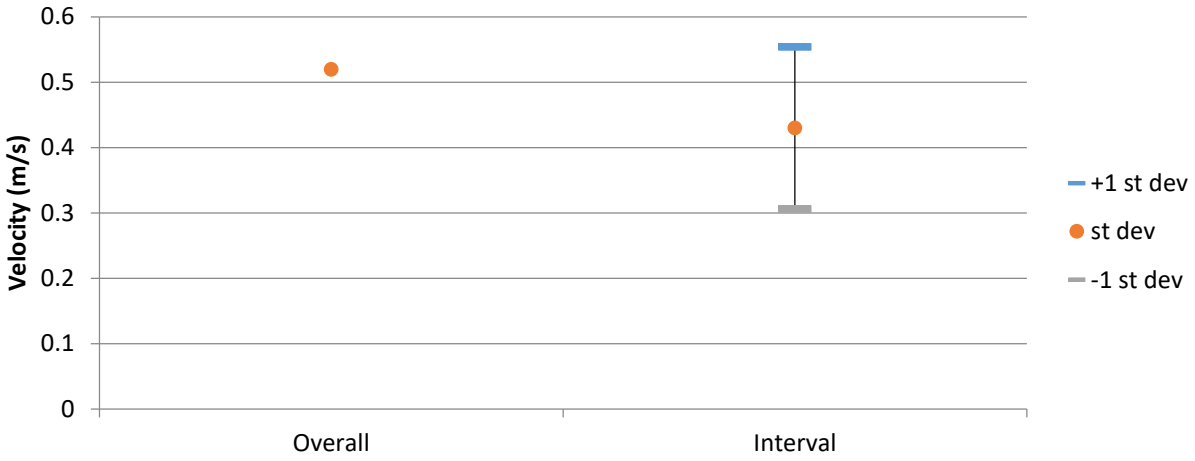


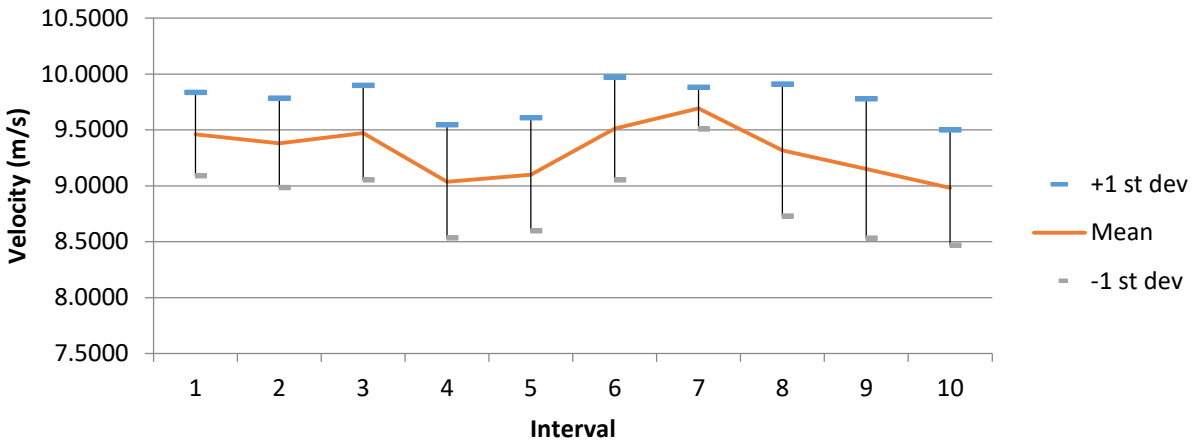
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 30
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 09-Aug-13
First Sample Time: 09:41:15.015

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.7167	9.6053	11.1553	0.2720
u	12.2000	8.0900	10.6184	0.3737
v	3.0700	-3.9400	-0.4766	1.0488
w	1.0800	-7.7600	-3.0342	1.0449

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	12.2555	10.2179	11.1374	0.2512	2.1033
2	12.3213	10.3520	11.2473	0.2366	2.2491
3	12.2075	10.1481	11.1061	0.2498	2.7433
4	12.7167	9.7918	11.2381	0.3083	2.4665
5	12.5168	9.6053	11.0612	0.2728	2.2238
6	12.1466	9.9548	11.0979	0.2468	1.6076
7	11.6852	10.4160	11.0402	0.1775	1.6996
8	11.7128	10.4177	11.0809	0.1883	2.0357
9	12.3107	10.6830	11.4270	0.2326	2.5853
10	12.0941	10.3533	11.1167	0.2874	2.1974
		Average	11.1553	0.2451	2.1912
		St Dev	0.1175	0.0403	0.3398

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.3802	0.5176	-3.6356	0.5528	1.1716	1.0927	5.3252	11.2867	10.5272
2	10.6225	0.1823	-3.4965	0.2971	1.0410	0.5388	2.7967	9.7996	5.0723
3	10.3780	0.0053	-3.7878	0.4195	0.5707	0.9251	4.0417	5.4993	8.9139
4	10.6233	0.2210	-3.2953	0.3313	1.1680	1.0742	3.1189	10.9943	10.1122
5	10.7893	-1.4412	-1.5089	0.2848	0.8990	0.8786	2.6394	8.3320	8.1428
6	10.6561	-1.1008	-2.6821	0.2401	0.8711	0.6699	2.2534	8.1746	6.2863
7	10.7737	-0.2131	-2.3344	0.1783	0.4269	0.3685	1.6546	3.9623	3.4201
8	10.7685	-0.8214	-2.4299	0.1559	0.2928	0.4140	1.4476	2.7193	3.8441
9	10.8550	-1.0908	-3.3055	0.1861	0.5597	0.5795	1.7148	5.1563	5.3381
10	10.3368	-1.0246	-3.8661	0.4010	0.6157	0.5266	3.8792	5.9563	5.0941

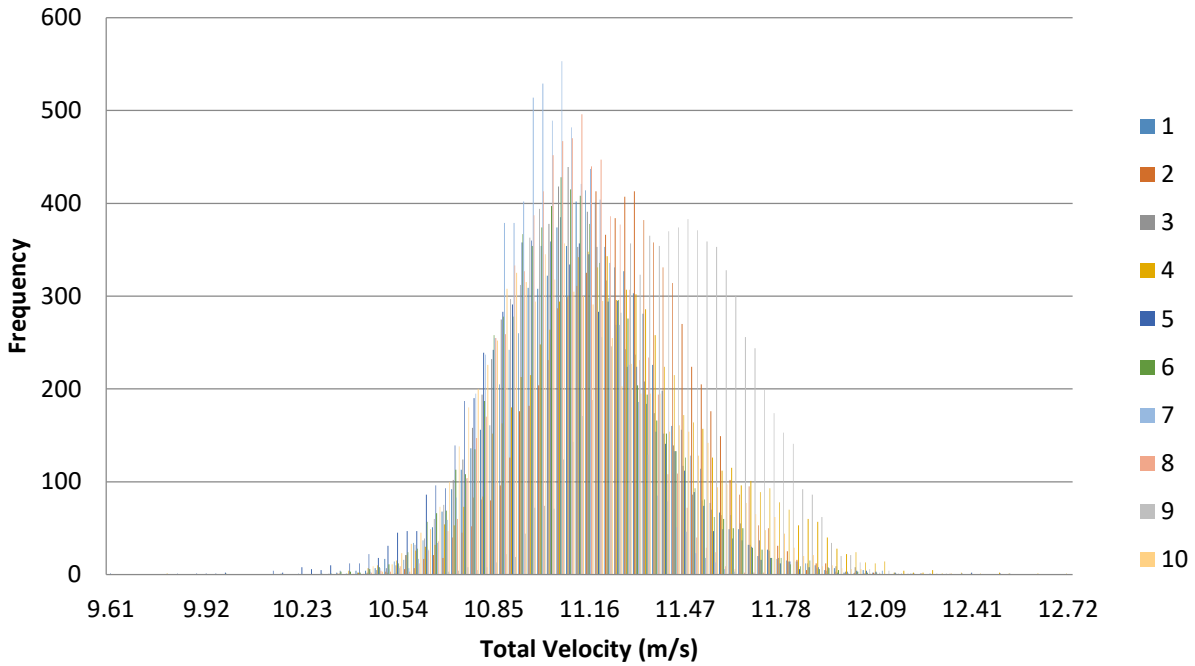


Figure 1. Velocity histogram for each interval (100 bins).

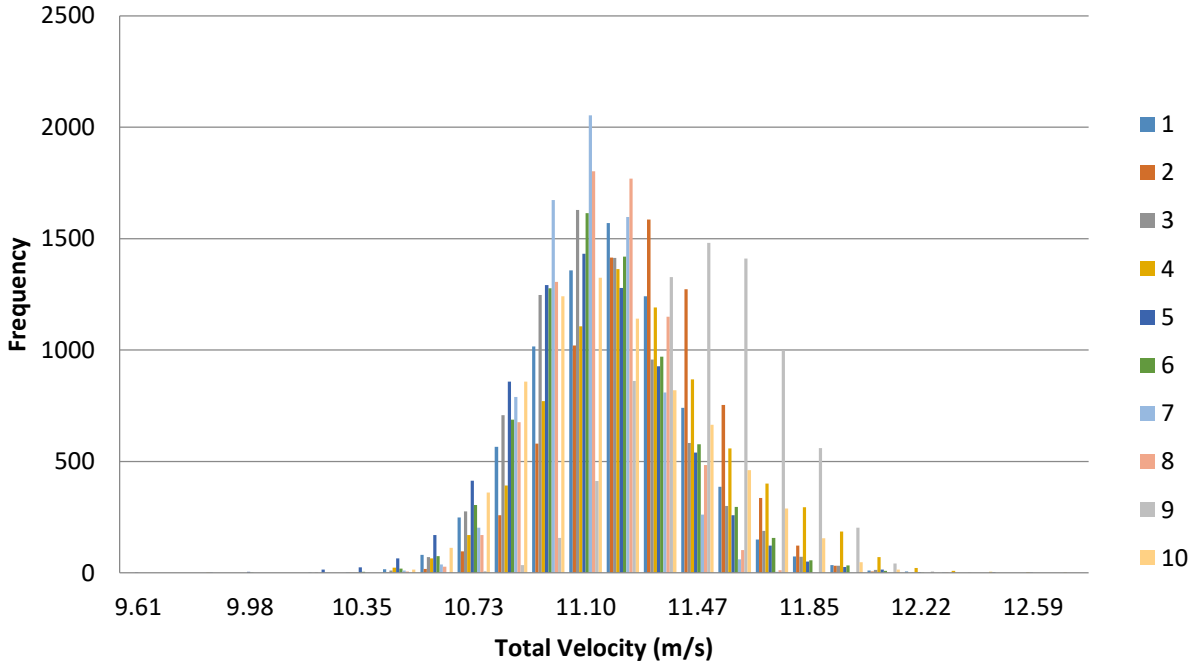
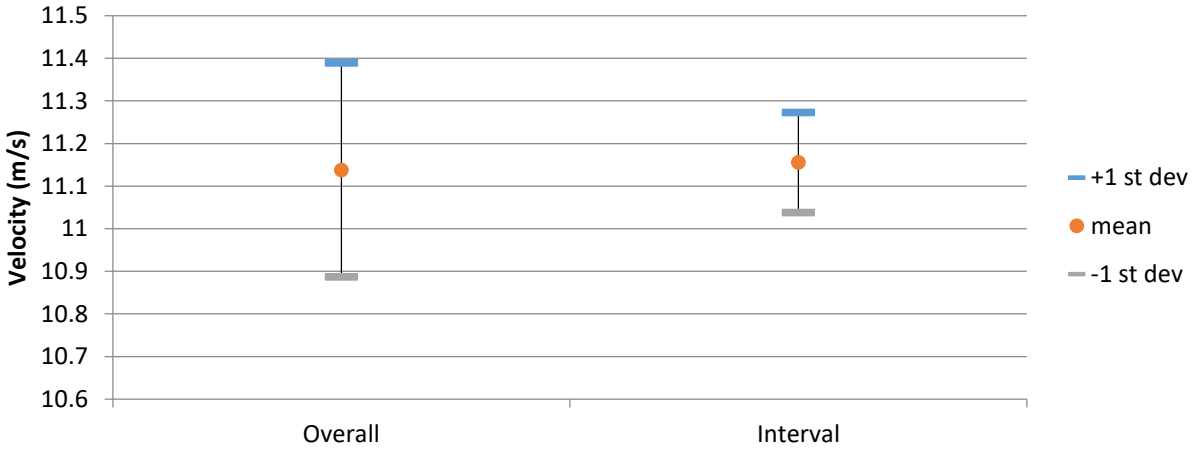
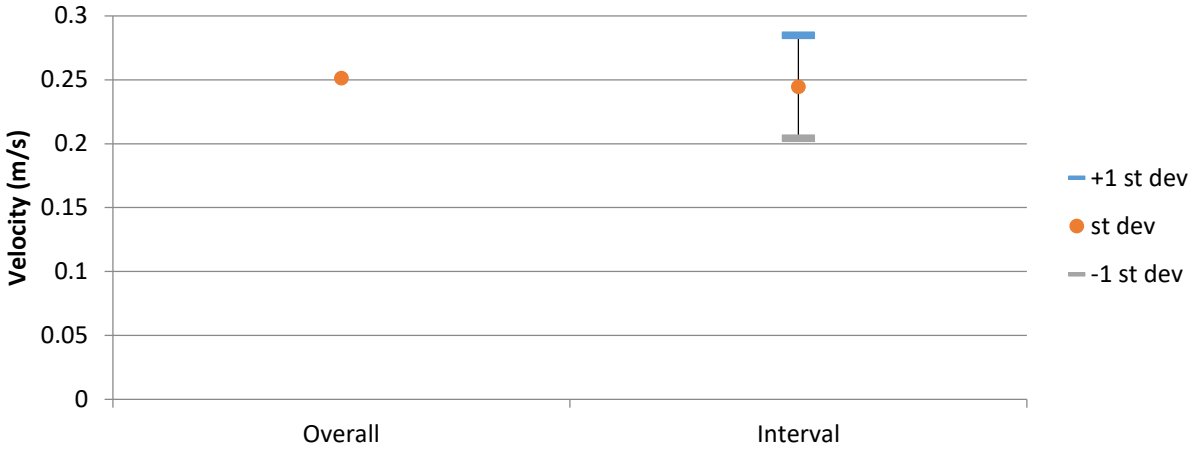


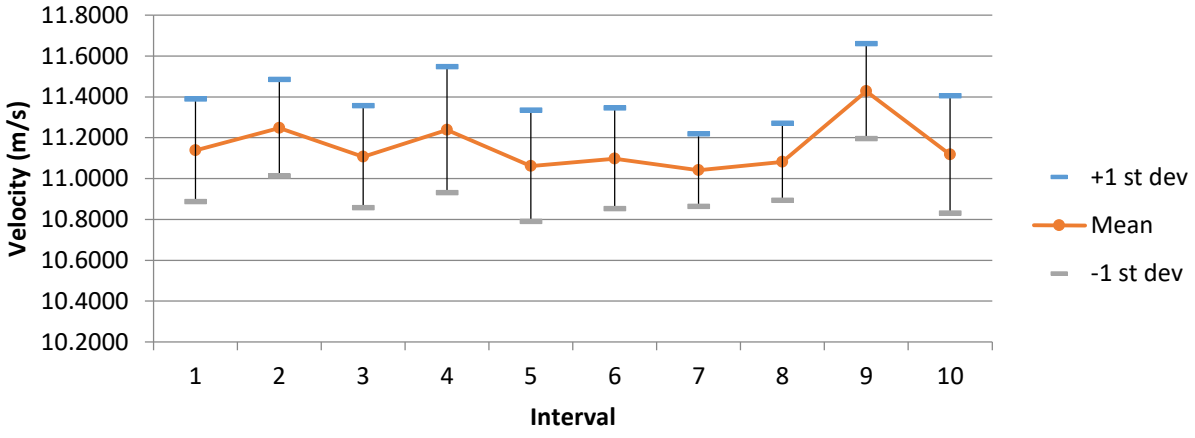
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 31
Blockage Condition: No Buildings.
Blower Frequency: 0 Hz
Inlet Probe Location: E3
First Sample Date: 09-Aug-13
First Sample Time: 09:47:07.843

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	1.1155	0.4945	0.8457	0.0445
u	0.7550	0.3340	0.4939	0.0452
v	0.6180	-0.2790	0.3931	0.0448
w	0.7590	0.0009	0.5574	0.0634

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	0.9906	0.6285	0.8431	0.0441	5.2326	4585	36.68 %
2	0.9990	0.6842	0.8531	0.0417	4.8877	4360	34.88 %
3	1.0168	0.6484	0.8447	0.0430	5.0937	4242	33.94 %
4	1.1155	0.4945	0.8442	0.0560	6.6279	4390	35.12 %
5	0.9808	0.6765	0.8418	0.0431	5.1243	3717	29.74 %
6	1.0015	0.6402	0.8408	0.0422	5.0164	3530	28.24 %
7	0.9717	0.6871	0.8377	0.0421	5.0241	4123	32.98 %
8	0.9797	0.7053	0.8427	0.0432	5.1258	4863	38.90 %
9	1.0199	0.7122	0.8510	0.0423	4.9745	3920	31.36 %
10	0.9951	0.6703	0.8572	0.0424	4.9503	3833	30.66 %
		Average	0.8456	0.0440	5.2057		
		St dev	0.0058	0.0040	0.4835		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	0.4880	0.4028	0.5517	0.0436	0.0462	0.0627	8.9378	9.4661	12.8520
2	0.4935	0.4037	0.5619	0.0416	0.0409	0.0616	8.4387	8.2963	12.4780
3	0.4869	0.4044	0.5545	0.0430	0.0415	0.0619	8.8326	8.5339	12.7109
4	0.4924	0.3962	0.5522	0.0478	0.0646	0.0703	9.7149	13.1218	14.2689
5	0.4944	0.3940	0.5506	0.0450	0.0402	0.0637	9.0966	8.1283	12.8762
6	0.4952	0.3931	0.5488	0.0449	0.0415	0.0632	9.0723	8.3716	12.7607
7	0.4896	0.3846	0.5553	0.0445	0.0407	0.0617	9.0823	8.3071	12.5990
8	0.4877	0.3848	0.5647	0.0427	0.0401	0.0614	8.7530	8.2320	12.5795
9	0.5001	0.3848	0.5659	0.0458	0.0410	0.0617	9.1627	8.1960	12.3403
10	0.5068	0.3846	0.5692	0.0473	0.0409	0.0620	9.3280	8.0676	12.2354

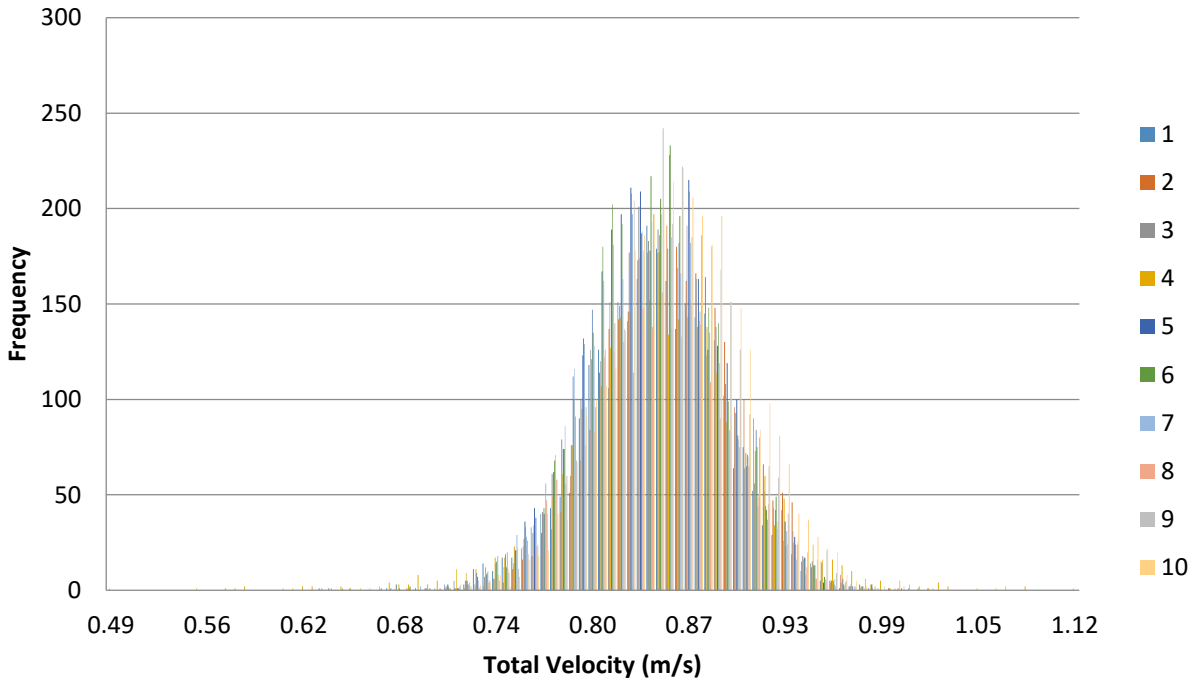


Figure 1. Velocity histogram for each interval (100 bins).

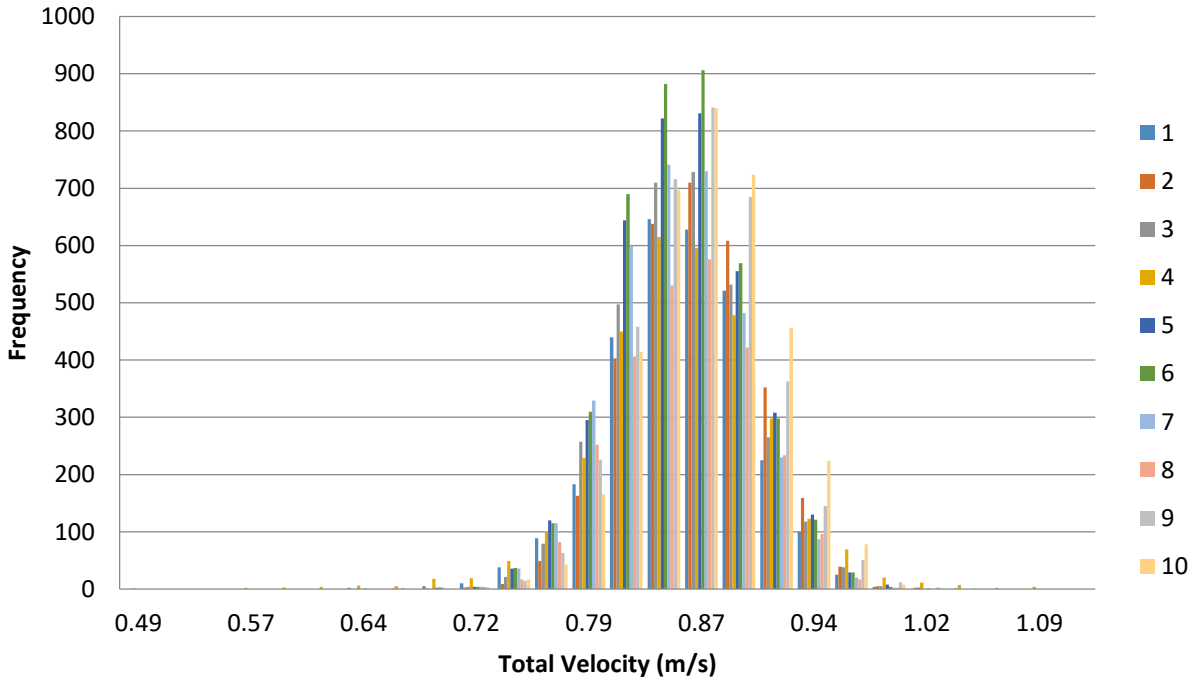
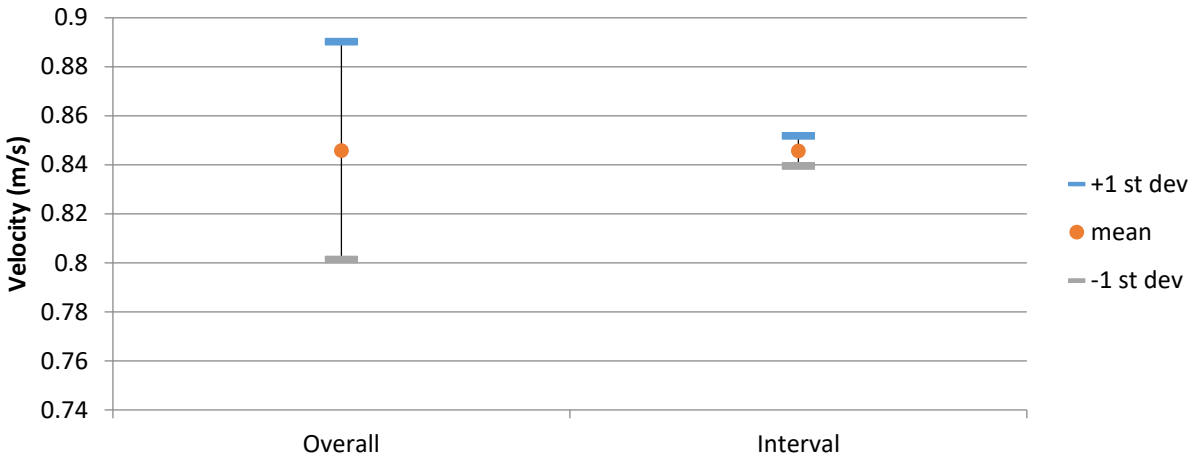
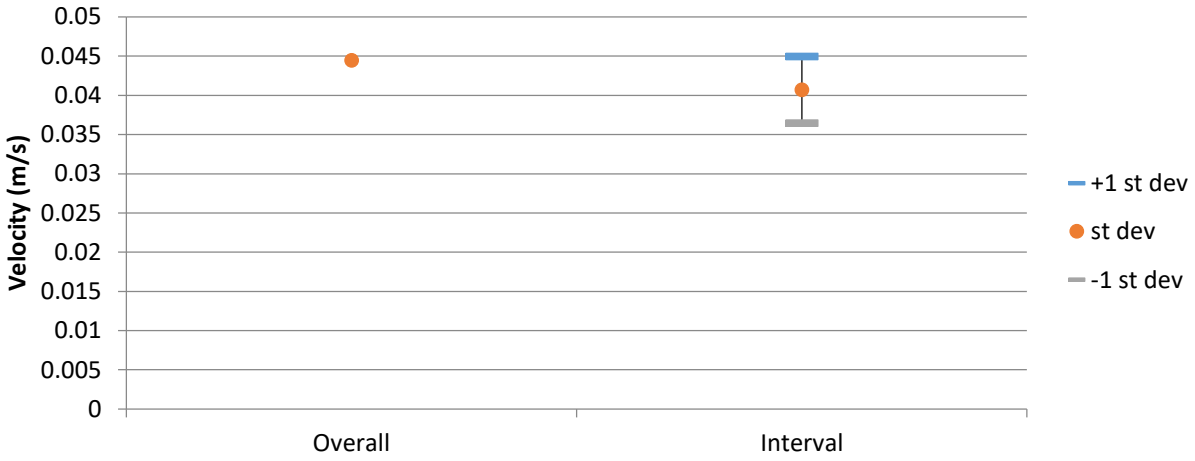


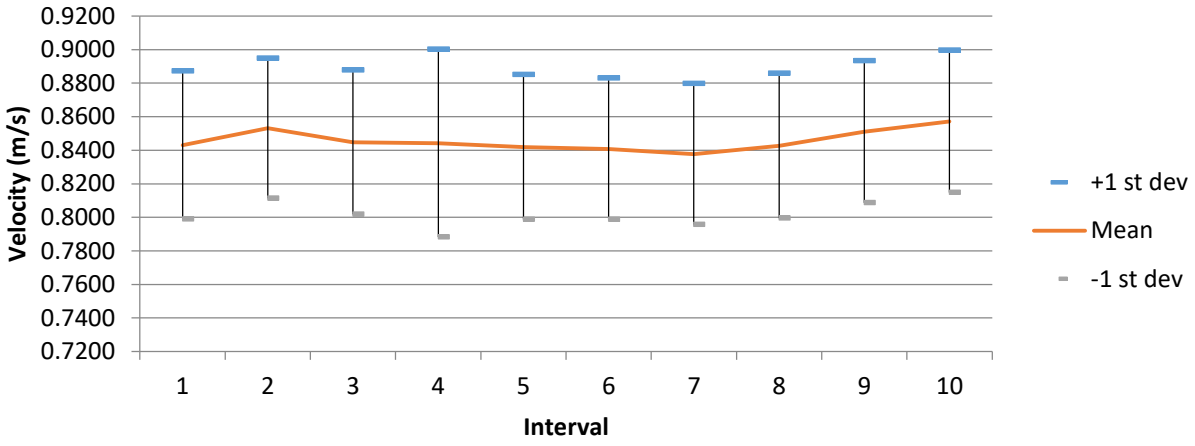
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 32
Blockage Condition: All Buildings
Blower Frequency: 13 Hz
Inlet Probe Location: E3
First Sample Date: 13-Aug-13
First Sample Time: 08:02:32.625

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	3.5231	2.8240	3.1352	0.0784
u	3.3200	2.3500	2.8712	0.1448
v	0.4330	-1.4000	-0.3312	0.2190
w	0.0095	-1.9700	-1.1362	0.3504

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	3.4149	2.9924	3.1604	0.0568	1.4991
2	3.3926	2.9940	3.1845	0.0477	2.0355
3	3.5231	2.9220	3.1954	0.0650	2.1355
4	3.4214	2.8930	3.1878	0.0681	2.2505
5	3.3291	2.8784	3.1093	0.0700	1.5402
6	3.3859	2.9547	3.1485	0.0485	2.2200
7	3.3055	2.8779	3.1129	0.0691	2.0770
8	3.3883	2.9425	3.1512	0.0654	1.6635
9	3.1840	2.8240	3.0318	0.0504	1.5644
10	3.3137	2.8760	3.0704	0.0480	1.8791
		Average	3.1352	0.0589	1.8865
		St Dev	0.0537	0.0095	0.2807

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	3.0652	-0.4553	-0.5078	0.0667	0.2107	0.2867	2.1763	6.8737	9.3521
2	3.0356	-0.3674	-0.8340	0.0836	0.2114	0.2150	2.7541	6.9642	7.0841
3	2.8578	-0.4804	-1.3168	0.0947	0.1985	0.1861	3.3146	6.9460	6.5129
4	2.8320	-0.4305	-1.3805	0.0997	0.1502	0.1521	3.5220	5.3043	5.3711
5	2.6903	-0.3934	-1.4951	0.1215	0.1126	0.1318	4.5177	4.1854	4.9005
6	2.8444	-0.3787	-1.2886	0.0732	0.0827	0.0953	2.5720	2.9059	3.3513
7	2.7780	-0.3597	-1.3366	0.1257	0.1768	0.1216	4.5251	6.3637	4.3787
8	2.8636	-0.1873	-1.2762	0.0870	0.2076	0.1421	3.0379	7.2486	4.9636
9	2.8010	-0.2047	-1.0949	0.1144	0.1897	0.2438	4.0834	6.7712	8.7033
10	2.9440	-0.0541	-0.8310	0.0628	0.1712	0.1886	2.1325	5.8147	6.4048

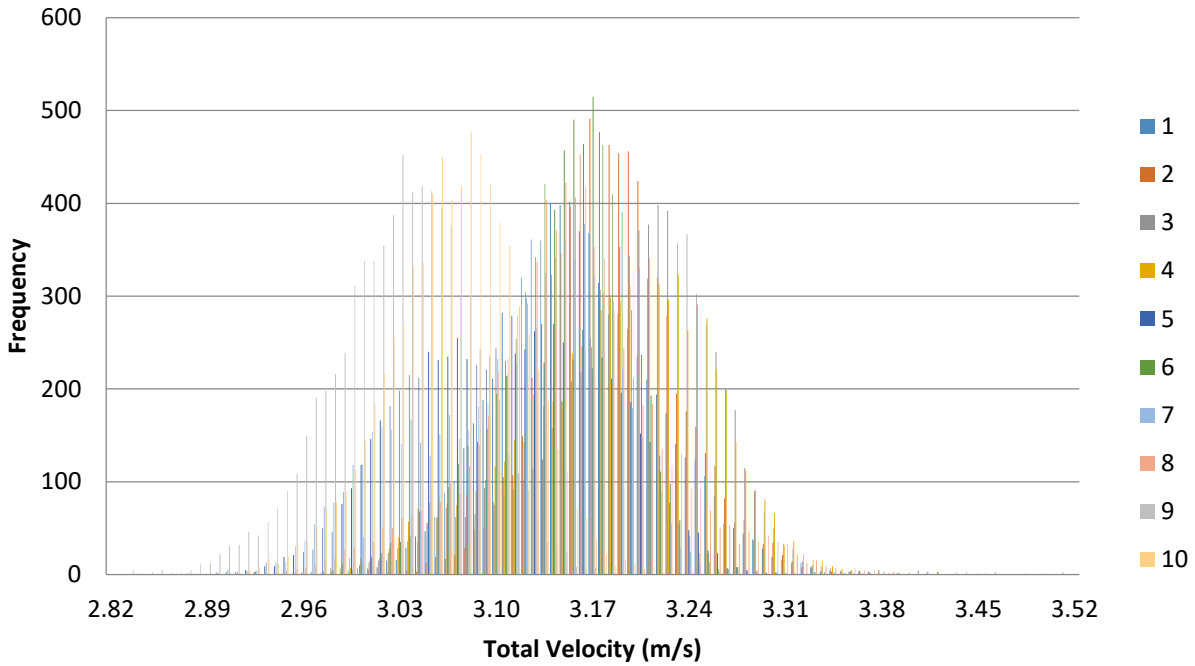


Figure 1. Velocity histogram for each interval (100 bins).

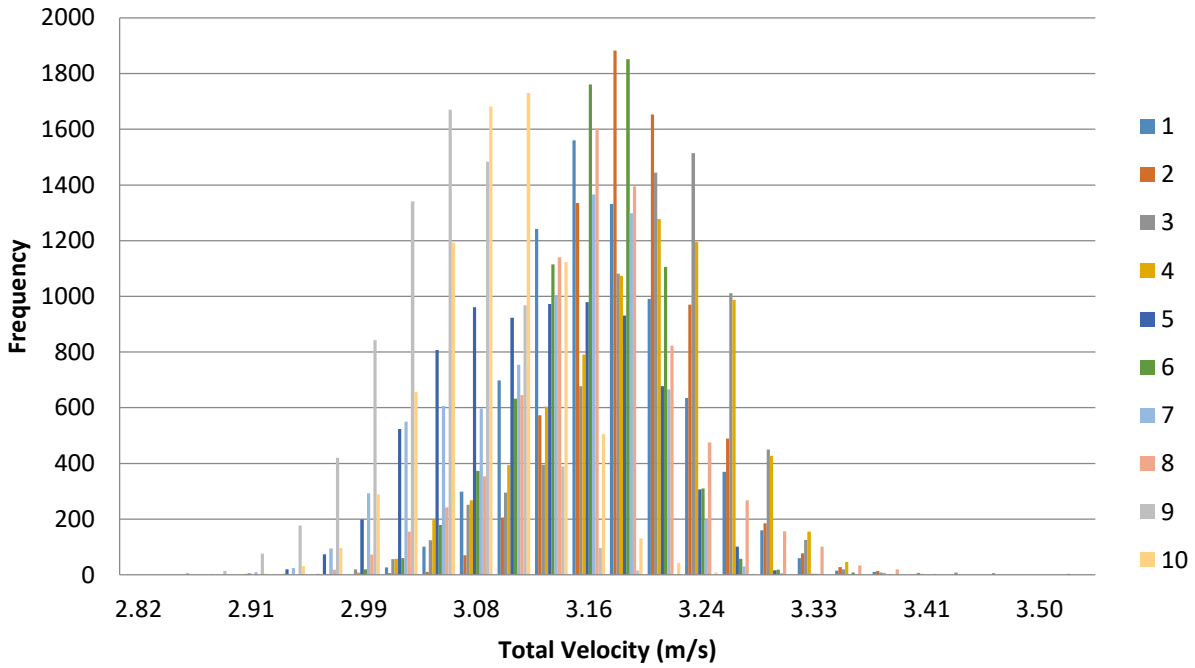
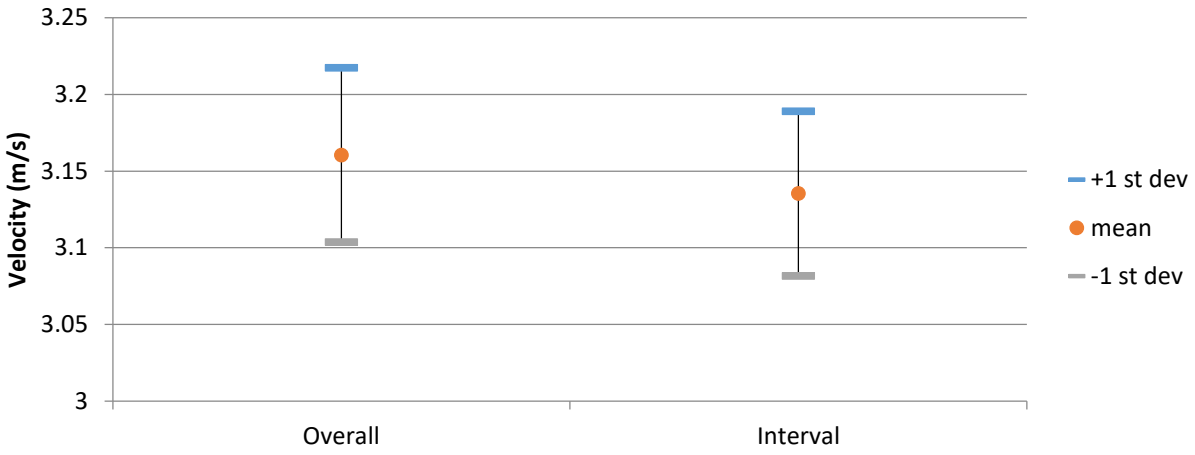
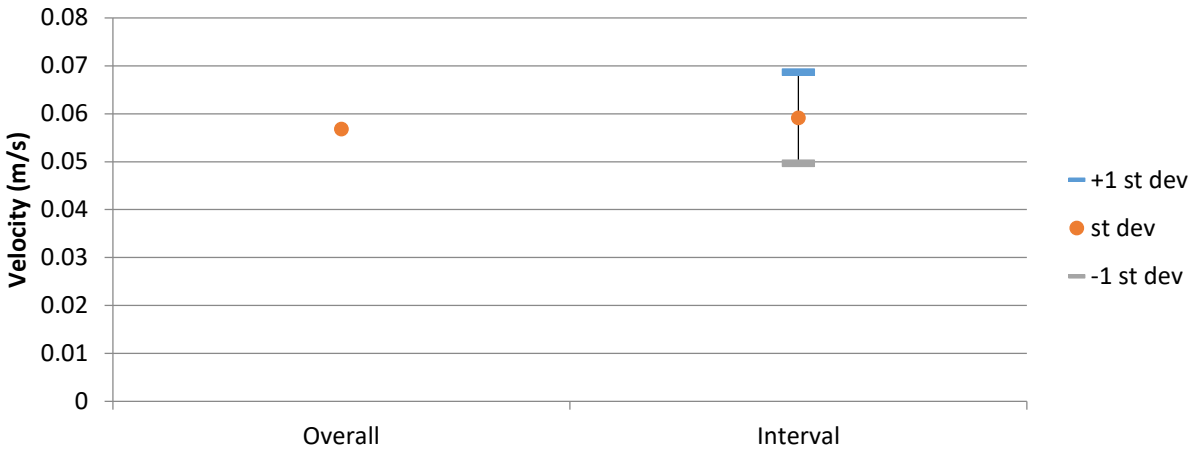


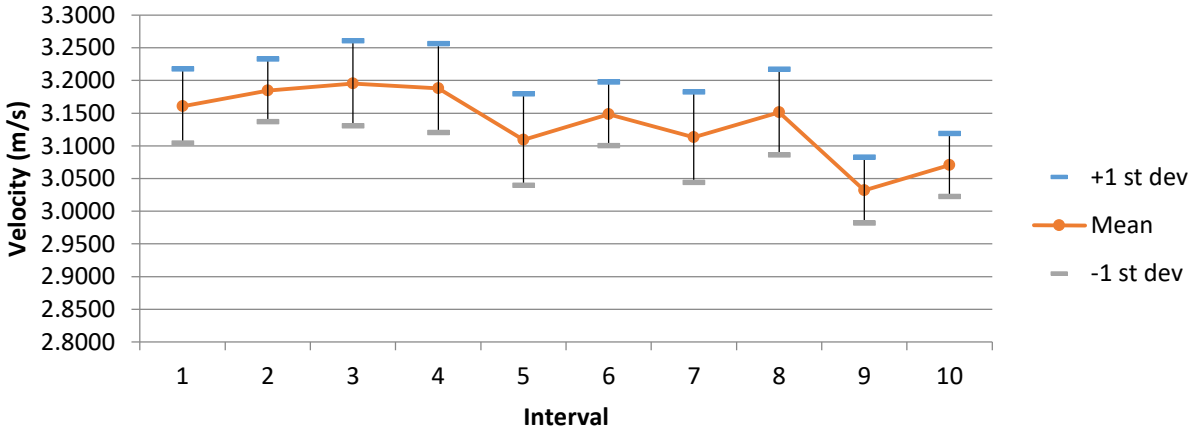
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 33
Blockage Condition: All buildings.
Blower Frequency: 20 Hz
Inlet Probe Location: E3
First Sample Date: 13-Aug-13
First Sample Time: 08:05:42.468

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.6453	3.5665	4.6199	0.1096
u	5.4000	3.2200	4.4057	0.1790
v	2.0700	-2.0700	0.0142	0.4774
w	0.3310	-2.9500	-1.2099	0.4707

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	4.8625	4.2349	4.5736	0.0739	2.6678
2	5.3027	3.5665	4.6725	0.1247	2.2754
3	5.3228	4.1032	4.6420	0.1056	3.0861
4	5.2271	4.2953	4.6701	0.1441	2.9807
5	5.6453	3.8313	4.6501	0.1386	2.8489
6	5.4830	3.9037	4.6315	0.1319	1.1765
7	4.7811	4.2580	4.5757	0.0538	1.3929
8	4.8810	4.3267	4.6112	0.0642	1.4383
9	4.8811	4.2082	4.5678	0.0657	1.5713
10	5.3442	4.0449	4.6046	0.0724	2.1103
		Average	4.6199	0.0975	2.1548
		St Dev	0.0394	0.0351	0.6857

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	4.2420	-0.0462	-1.6542	0.1433	0.2992	0.2836	3.3792	7.0522	6.6860
2	4.4447	0.5623	-1.2243	0.1247	0.3659	0.3580	2.8066	8.2330	8.0554
3	4.5348	0.3242	-0.7678	0.1231	0.3282	0.4210	2.7138	7.2373	9.2837
4	4.2678	0.0027	-1.6654	0.3101	0.6360	0.5849	7.2648	14.9030	13.7060
5	4.3632	0.2090	-1.4170	0.2309	0.4548	0.5420	5.2917	10.4245	12.4217
6	4.4101	-0.2481	-1.1609	0.1596	0.6368	0.4234	3.6191	14.4392	9.6003
7	4.4295	0.1372	-1.1083	0.0563	0.1946	0.1781	1.2721	4.3922	4.0208
8	4.4508	-0.2185	-1.1624	0.0607	0.1632	0.1692	1.3630	3.6669	3.8025
9	4.4263	-0.3563	-1.0406	0.0651	0.1872	0.1684	1.4713	4.2284	3.8043
10	4.4878	-0.2244	-0.8980	0.0874	0.2481	0.3756	1.9485	5.5285	8.3702

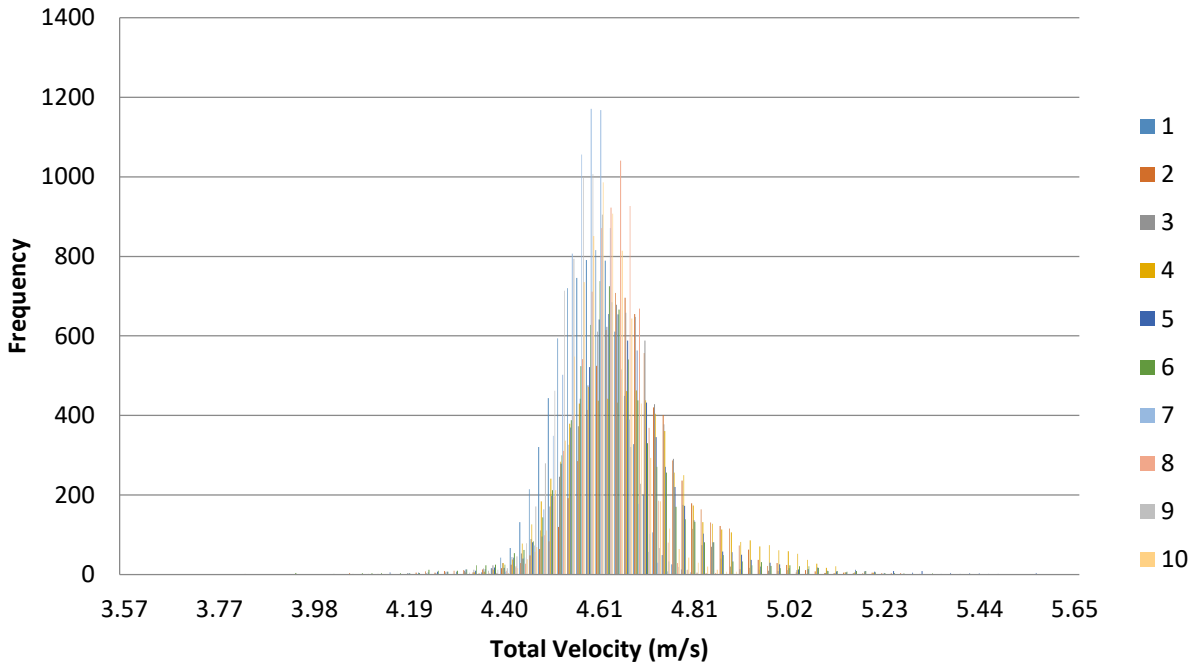


Figure 1. Velocity histogram for each interval (100 bins).

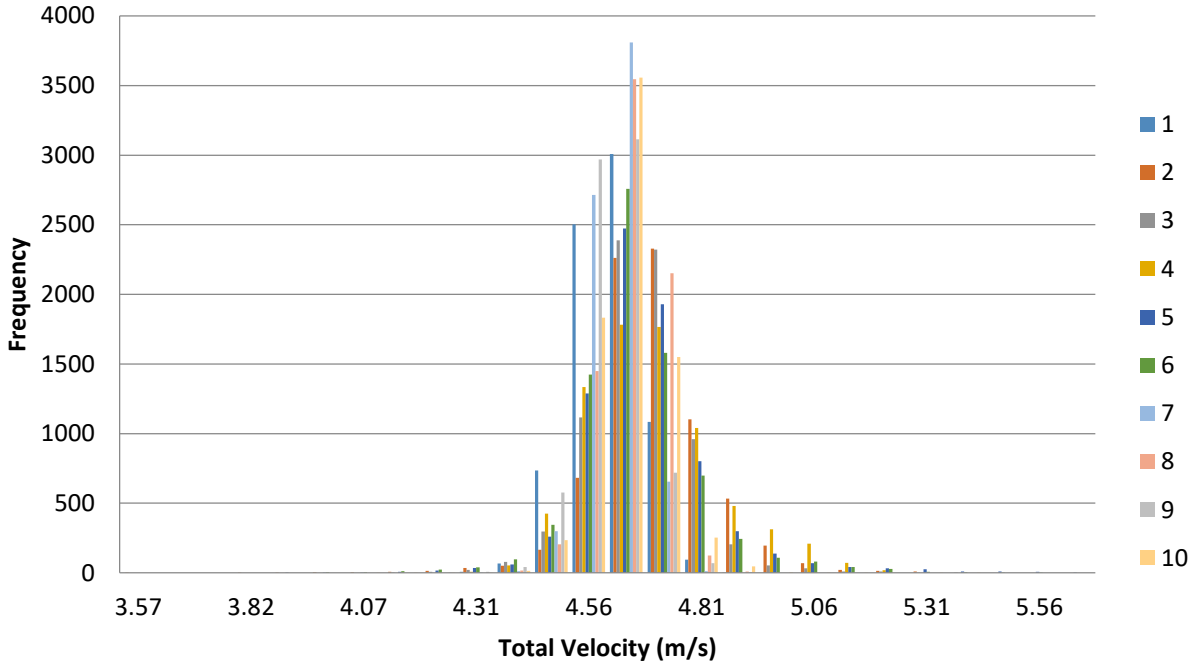
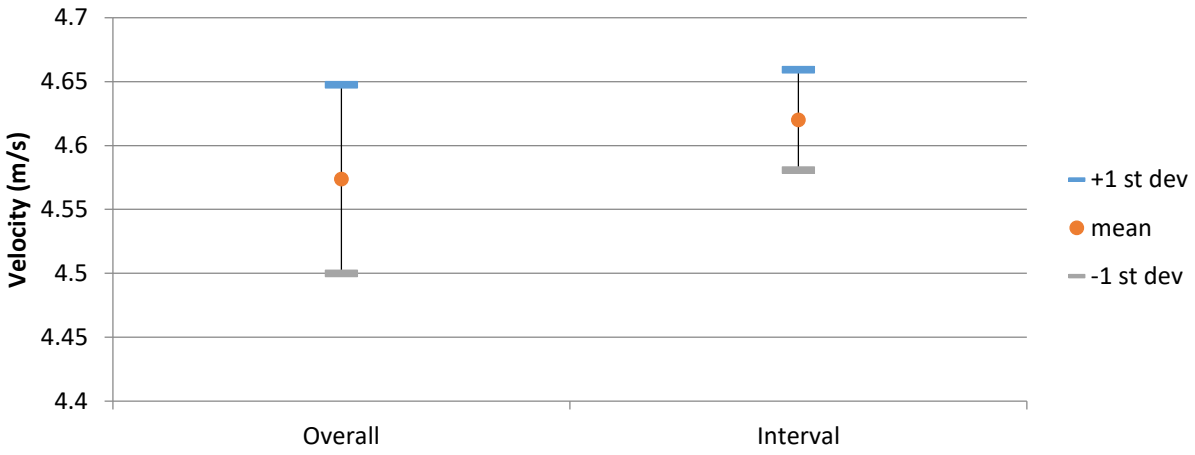
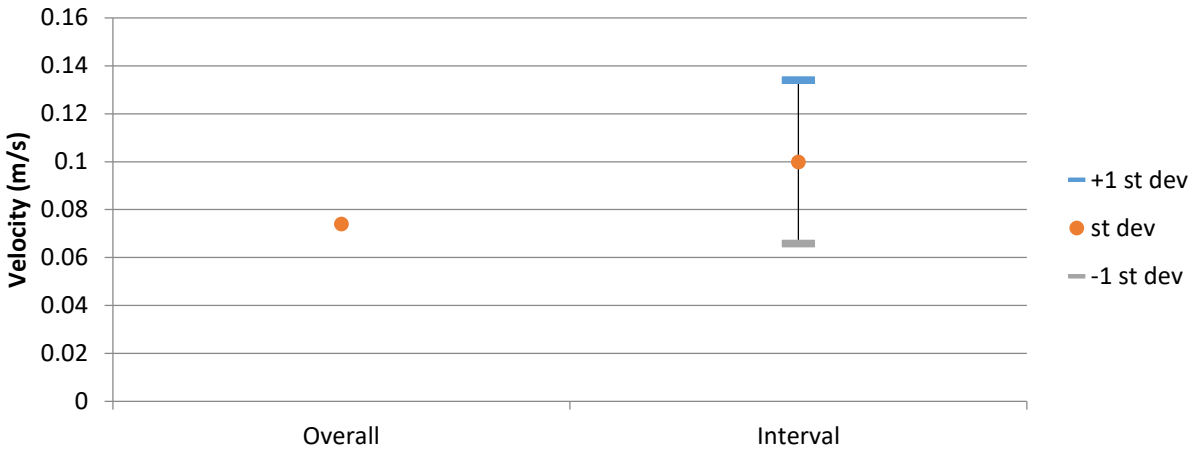


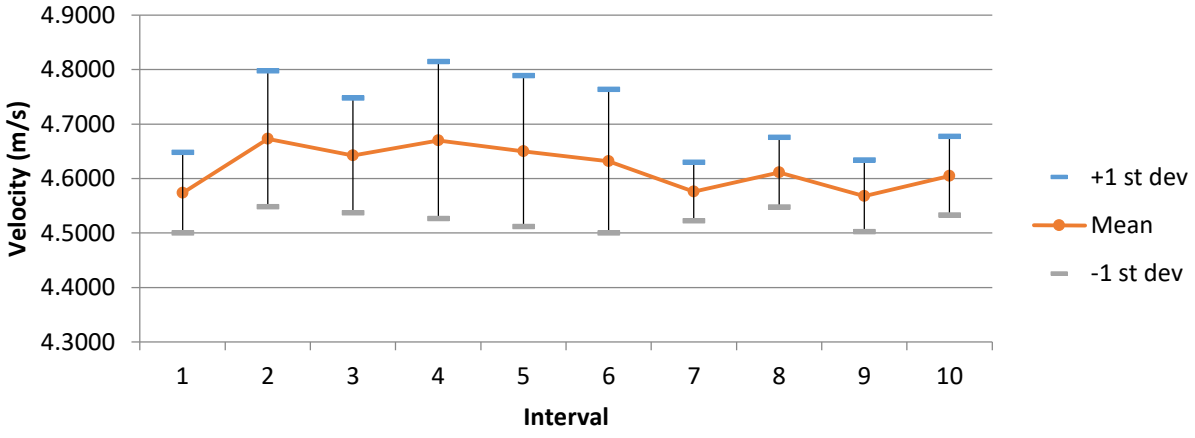
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 34
Blockage Condition: All Buildings
Blower Frequency: 30 Hz
Inlet Probe Location: E3
First Sample Date: 13-Aug-13
First Sample Time: 08:07:35.859

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	7.1740	6.3371	6.8136	0.0801
u	6.9400	6.1300	6.5705	0.0890
v	0.5770	-1.7200	-0.1578	0.3163
w	-0.7920	-2.6000	-1.7568	0.2035

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	7.0946	6.5802	6.8280	0.0739	1.1396
2	7.0859	6.5130	6.8099	0.0776	1.4532
3	7.1740	6.3371	6.8240	0.0992	1.1905
4	7.0988	6.4978	6.8035	0.0810	1.1084
5	7.0922	6.5228	6.8087	0.0755	1.1344
6	7.1414	6.5314	6.8188	0.0774	1.0986
7	7.1425	6.5287	6.8090	0.0748	1.1241
8	7.1249	6.4850	6.8292	0.0768	1.1201
9	7.0744	6.5202	6.8093	0.0763	1.1603
10	7.0776	6.4996	6.7955	0.0789	1.1612
		Average	6.8136	0.0791	1.1691
		St Dev	0.0110	0.0073	0.0982

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	6.5834	-0.0489	-1.8002	0.0751	0.1634	0.1019	1.1402	2.4816	1.5477
2	6.5544	-0.4410	-1.7807	0.0781	0.1839	0.1205	1.1920	2.8052	1.8390
3	6.5092	-0.7321	-1.8769	0.0900	0.2653	0.2657	1.3825	4.0765	4.0825
4	6.5236	-0.3722	-1.8840	0.0773	0.1222	0.1655	1.1842	1.8728	2.5373
5	6.5657	-0.2735	-1.7716	0.0785	0.1643	0.1000	1.1956	2.5029	1.5224
6	6.5967	0.0668	-1.7166	0.0779	0.1324	0.1036	1.1813	2.0076	1.5710
7	6.5958	0.0415	-1.6819	0.0748	0.0974	0.1376	1.1336	1.4761	2.0866
8	6.5281	0.1576	-1.9918	0.0835	0.1527	0.0697	1.2786	2.3391	1.0671
9	6.6048	0.0314	-1.6450	0.0798	0.1590	0.1030	1.2082	2.4076	1.5600
10	6.6429	-0.0078	-1.4191	0.0795	0.1516	0.1170	1.1963	2.2819	1.7614

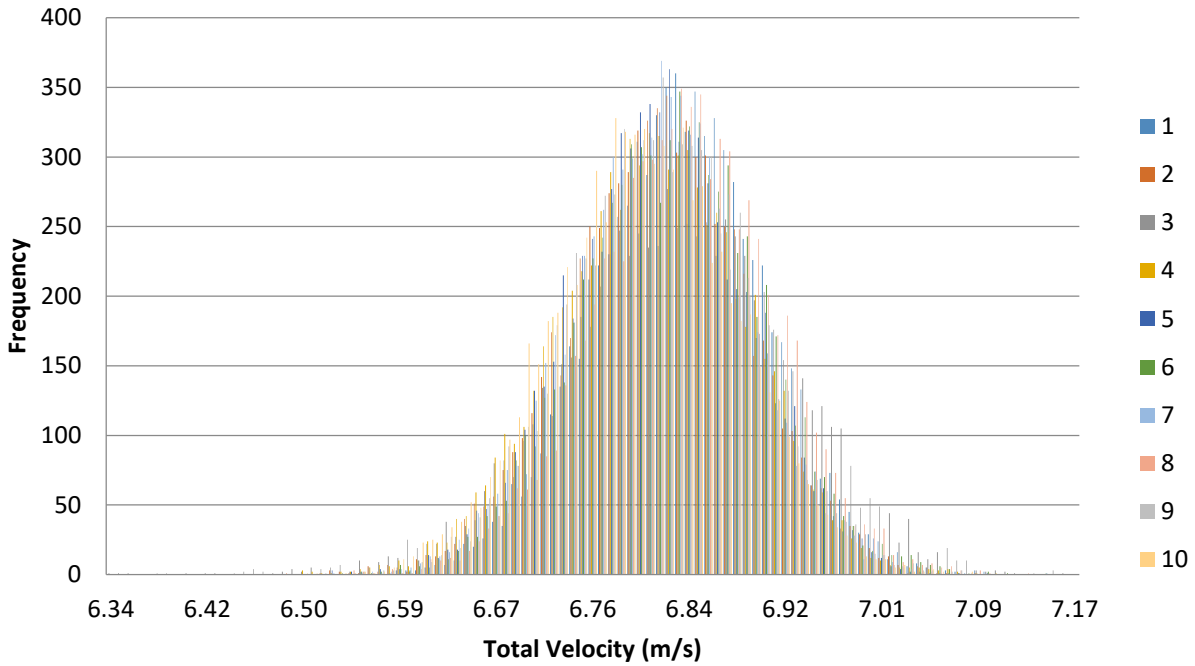


Figure 1. Velocity histogram for each interval (100 bins).

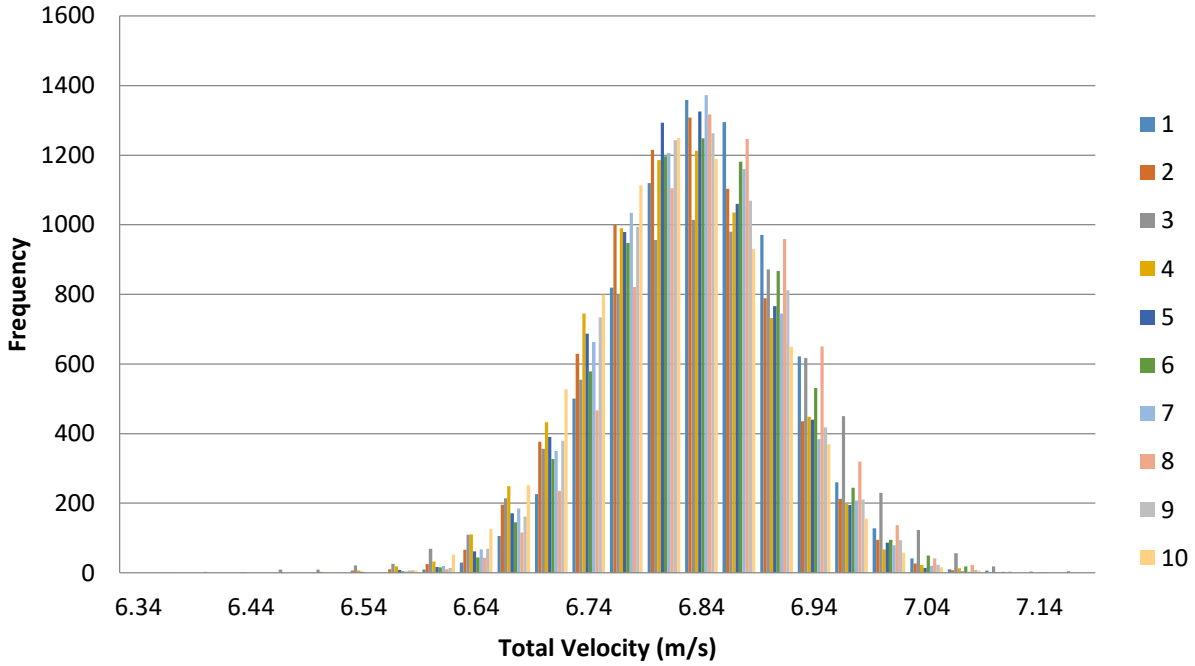
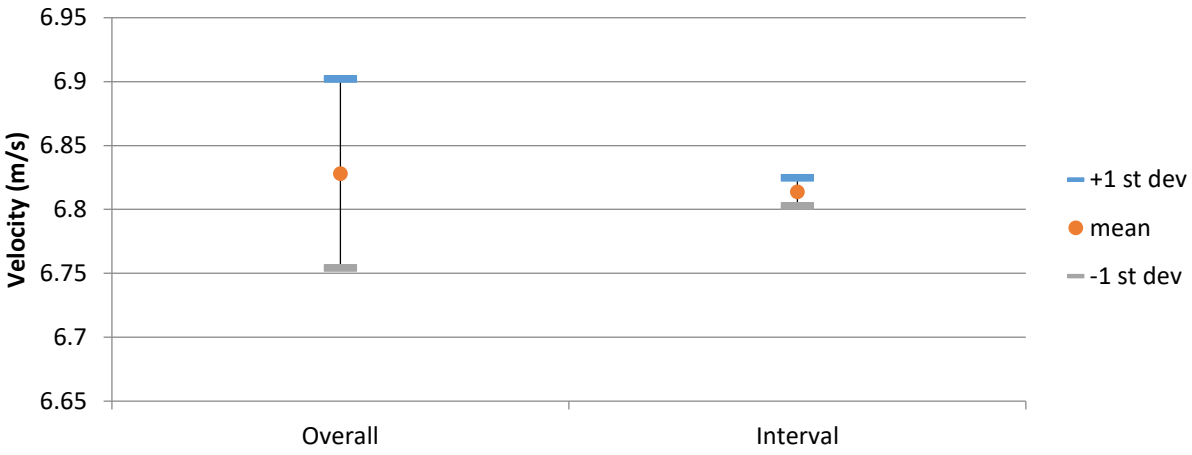
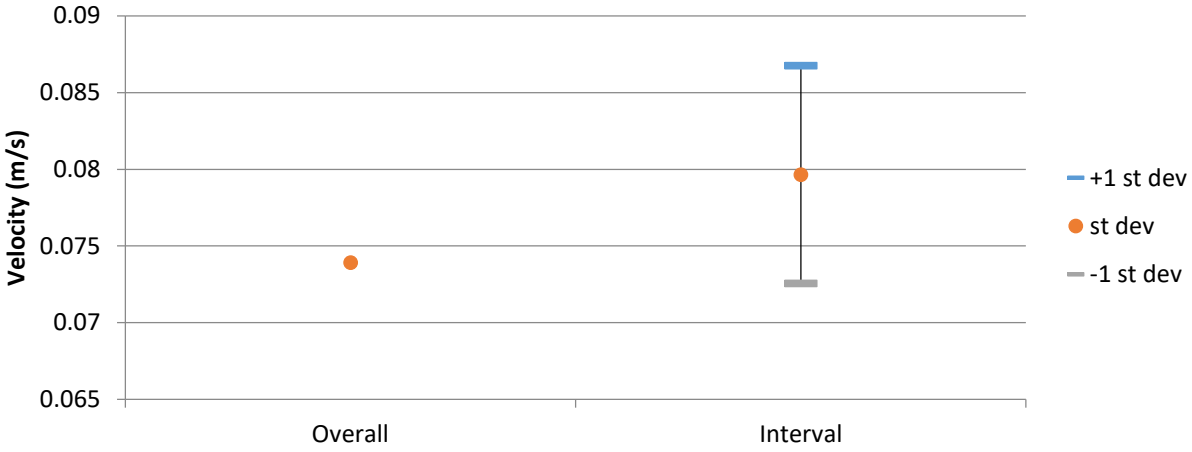


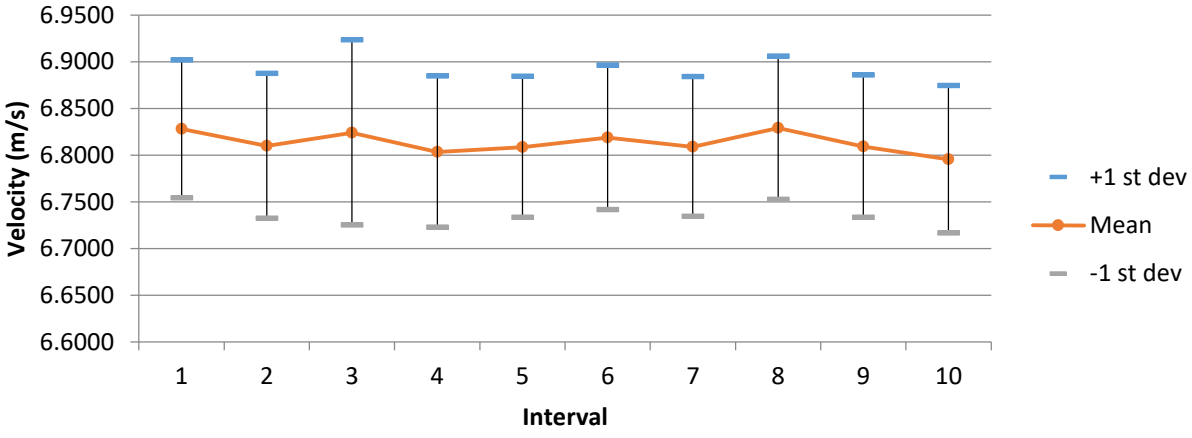
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 35
Blockage Condition: All Buildings
Blower Frequency: 40 Hz
Inlet Probe Location: E3
First Sample Date: 13-Aug-13
First Sample Time: 08:11:01.687

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.0656	8.3135	9.0168	0.1702
u	9.2800	7.4500	8.5628	0.2011
v	1.5600	-4.0400	-0.8153	0.9832
w	-0.5020	-4.1800	-2.4514	0.5726

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	9.4465	8.3613	8.9441	0.1560	1.8638
2	9.8182	8.4169	9.1240	0.1700	2.0350
3	10.0656	8.3917	9.0594	0.1844	1.8223
4	9.6427	8.4308	9.0607	0.1651	1.6843
5	9.6064	8.4865	9.0106	0.1518	1.6493
6	9.7084	8.4658	9.0634	0.1495	1.8376
7	9.5410	8.3135	8.9658	0.1648	2.0655
8	9.7071	8.3256	8.9594	0.1851	1.7231
9	9.5143	8.3553	8.9890	0.1549	1.3344
10	9.4635	8.5427	8.9913	0.1200	1.7761
		Average	9.0168	0.1601	1.7791
		St Dev	0.0578	0.0188	0.1967

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.4280	0.1070	-2.9697	0.1886	0.2997	0.1822	2.2376	3.5560	2.1619
2	8.4944	-1.2907	-3.0162	0.2161	0.4354	0.3479	2.5442	5.1262	4.0952
3	8.6455	-1.7526	-1.9573	0.1286	0.5496	0.3736	1.4880	6.3573	4.3212
4	8.5579	-1.6147	-2.3678	0.1795	0.5657	0.5668	2.0972	6.6104	6.6234
5	8.6385	-1.5058	-1.9162	0.1220	0.6789	0.4176	1.4128	7.8592	4.8344
6	8.6303	-0.3890	-2.4414	0.1852	1.0561	0.6517	2.1455	12.2371	7.5515
7	8.5778	-0.9597	-2.2282	0.1972	0.8229	0.4820	2.2987	9.5929	5.6187
8	8.4426	-1.2898	-2.5776	0.2344	0.5960	0.5567	2.7758	7.0589	6.5934
9	8.5713	0.1000	-2.6337	0.2245	0.4122	0.4385	2.6195	4.8088	5.1157
10	8.6420	0.4420	-2.4053	0.1378	0.2631	0.3220	1.5946	3.0447	3.7260

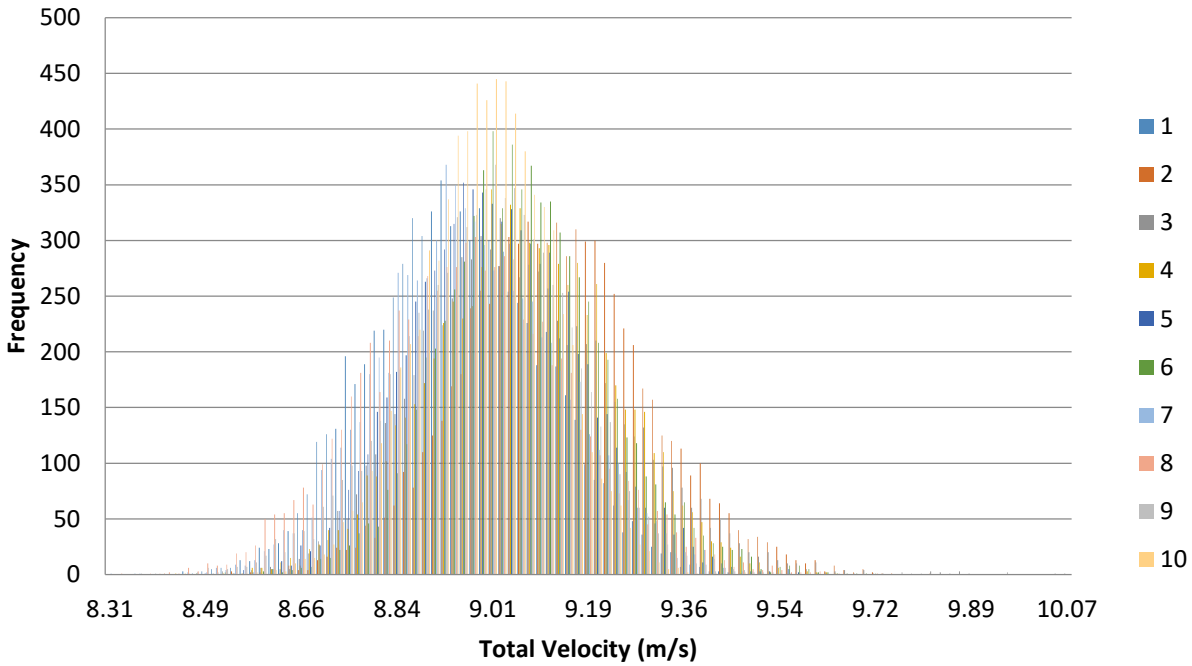


Figure 1. Velocity histogram for each interval (100 bins).

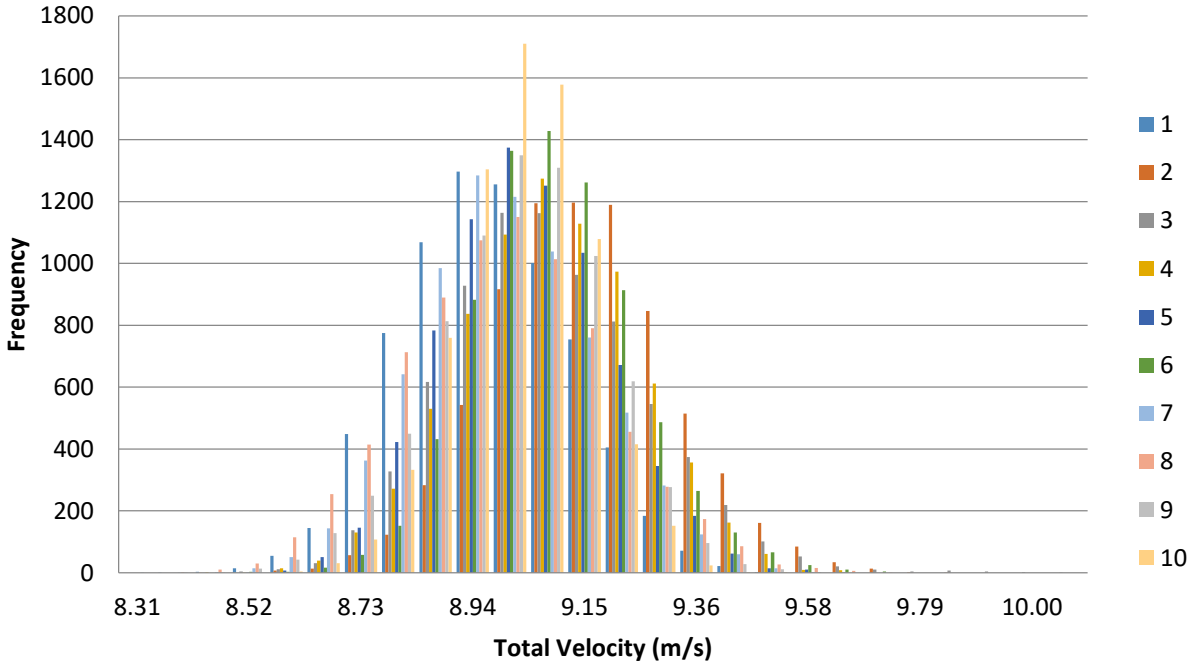
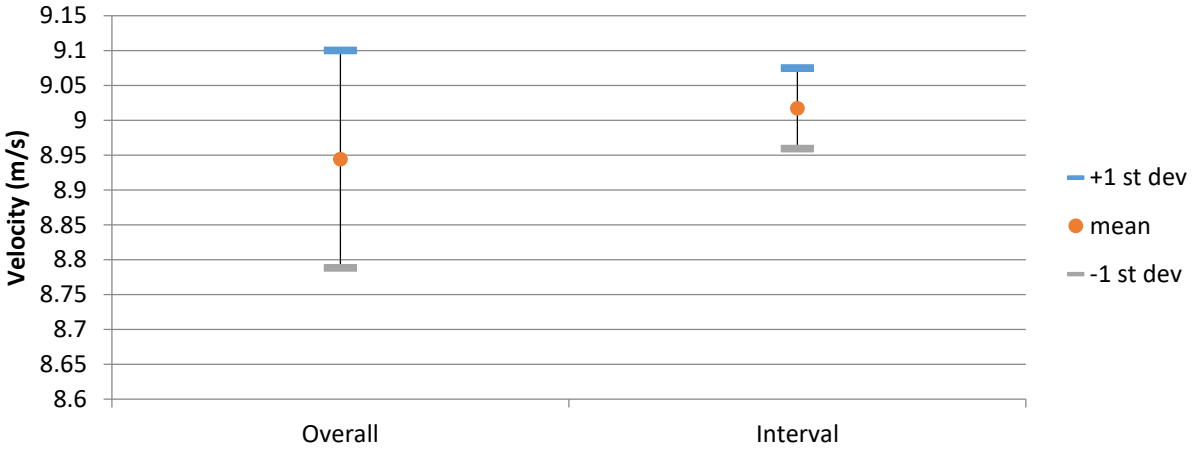
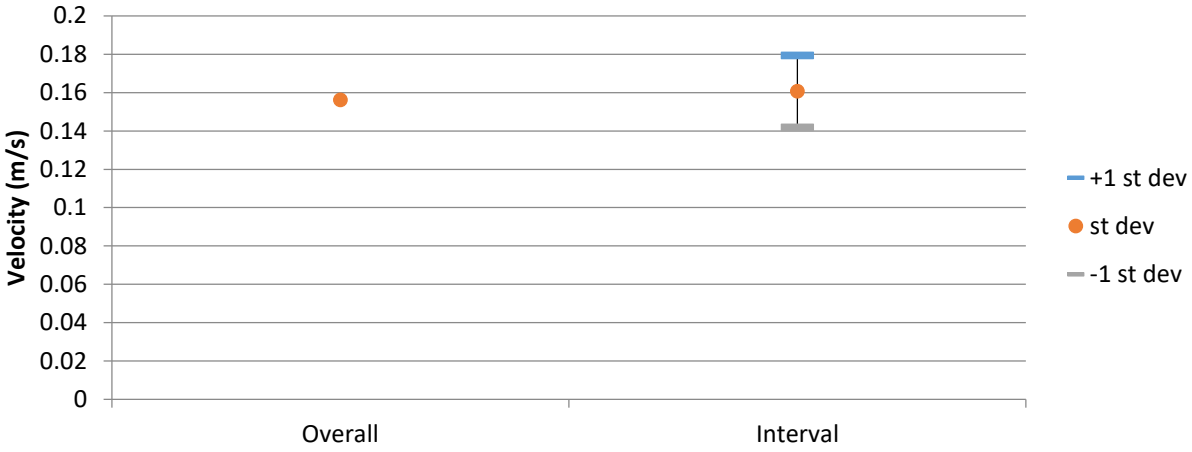


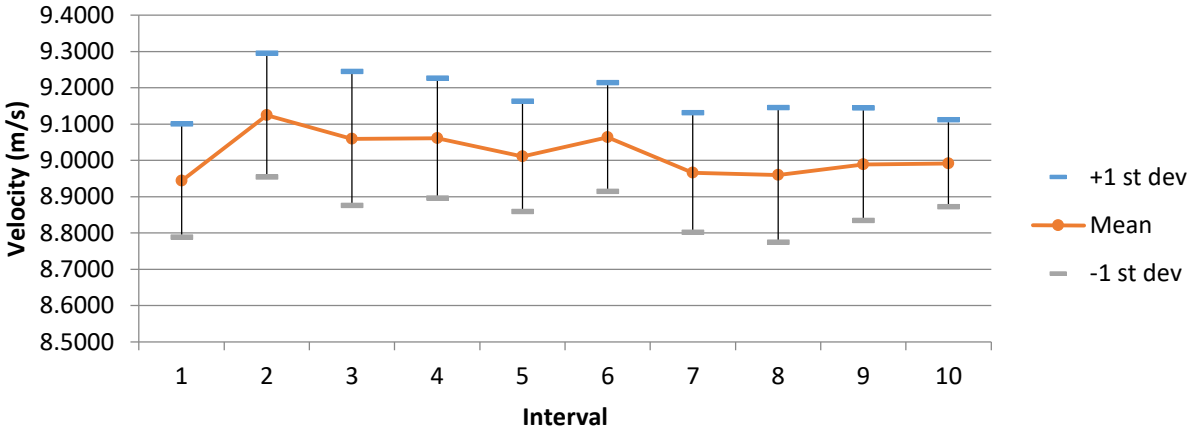
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 36
Blockage Condition: All Buildings.
Blower Frequency: 45 Hz
Inlet Probe Location: E3
First Sample Date: 13-Aug-13
First Sample Time: 08:13:49.828

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.2176	9.0382	10.0857	0.2300
u	10.8000	8.3000	9.7491	0.2265
v	2.2500	-3.0100	-0.4827	0.7701
w	0.4430	-4.8300	-2.2709	0.8334

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	10.9321	9.6407	10.2589	0.1687	2.1948
2	10.9826	9.6144	10.3193	0.2265	1.8986
3	11.0439	9.4244	10.1043	0.1918	2.0402
4	11.2176	9.0382	10.0784	0.2056	1.8106
5	11.1128	9.3353	10.0492	0.1820	1.6156
6	10.5741	9.2678	10.0149	0.1618	1.8163
7	10.9585	9.1300	9.9387	0.1805	1.7371
8	10.7055	9.2007	9.9561	0.1729	1.7589
9	10.9378	9.1332	10.0091	0.1760	2.7917
10	11.0963	9.3561	10.1277	0.2827	1.9321
		Average	10.0857	0.1949	1.9596
		St Dev	0.1235	0.0363	0.3177

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.7783	-0.7940	-2.9352	0.1467	0.4969	0.3797	1.5007	5.0817	3.8830
2	9.8714	-1.1567	-2.6446	0.1522	0.5578	0.6536	1.5422	5.6506	6.6215
3	9.7937	-1.2697	-2.0239	0.1741	0.4197	0.5501	1.7780	4.2856	5.6172
4	9.6121	-0.5742	-2.7724	0.2695	0.7497	0.7578	2.8037	7.7992	7.8835
5	9.6571	-0.3925	-2.5580	0.2247	0.6979	0.7255	2.3270	7.2269	7.5123
6	9.6622	-0.1504	-2.4295	0.2362	0.4418	0.8885	2.4447	4.5720	9.1961
7	9.7975	0.3798	-1.4187	0.1877	0.5433	0.5759	1.9162	5.5453	5.8783
8	9.7132	-0.2660	-1.9903	0.1695	0.6042	0.6181	1.7447	6.2207	6.3634
9	9.6895	-0.5393	-2.3305	0.2120	0.5204	0.5382	2.1882	5.3703	5.5549
10	9.9159	-0.0637	-1.6055	0.2504	0.8683	0.9627	2.5248	8.7565	9.7087

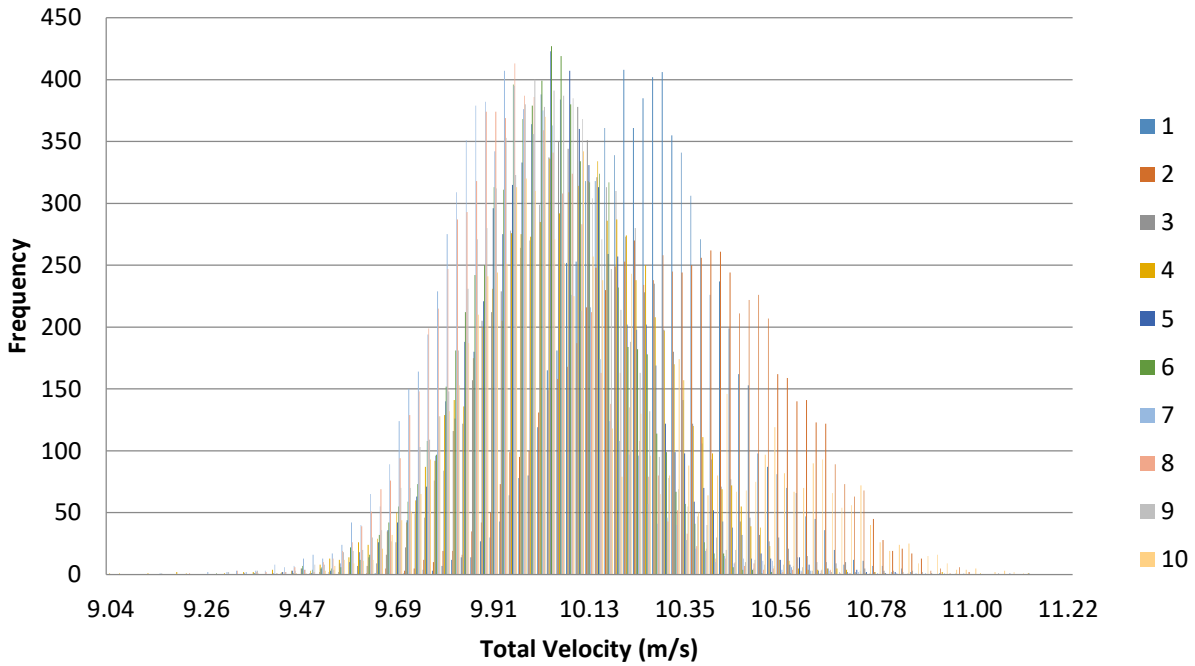


Figure 1. Velocity histogram for each interval (100 bins).

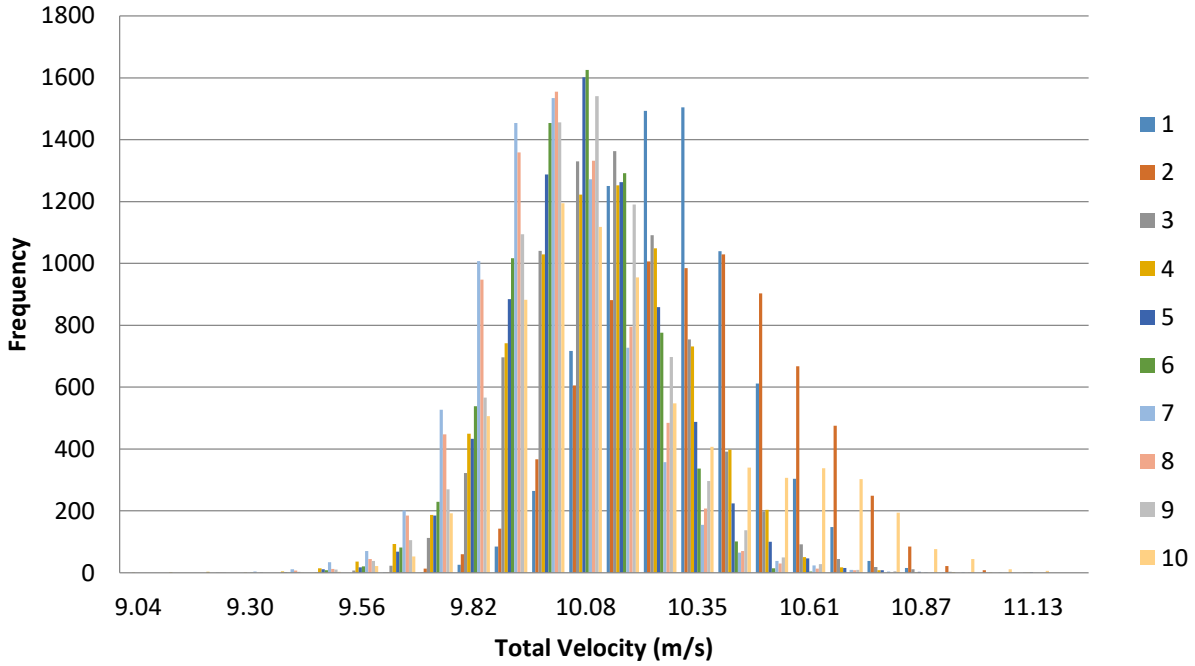
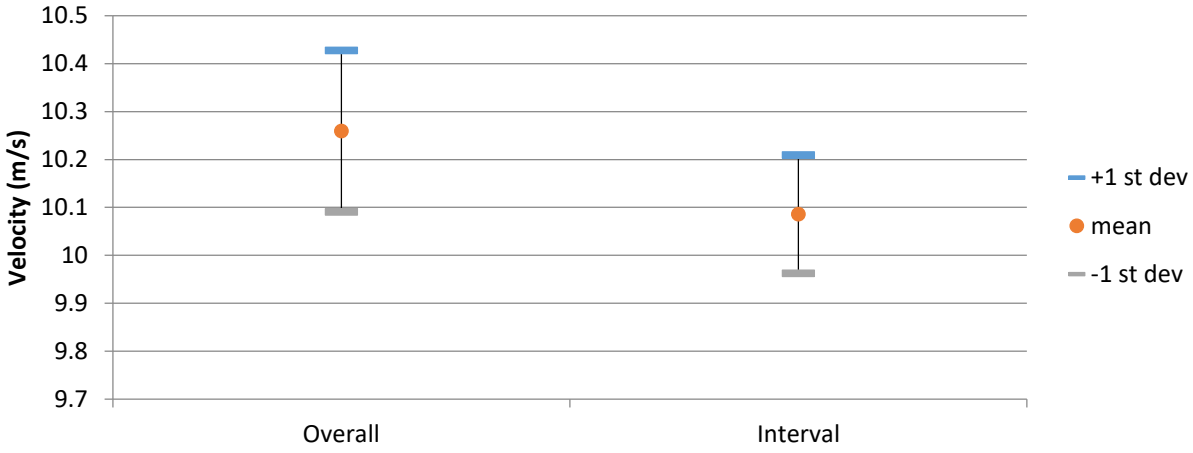
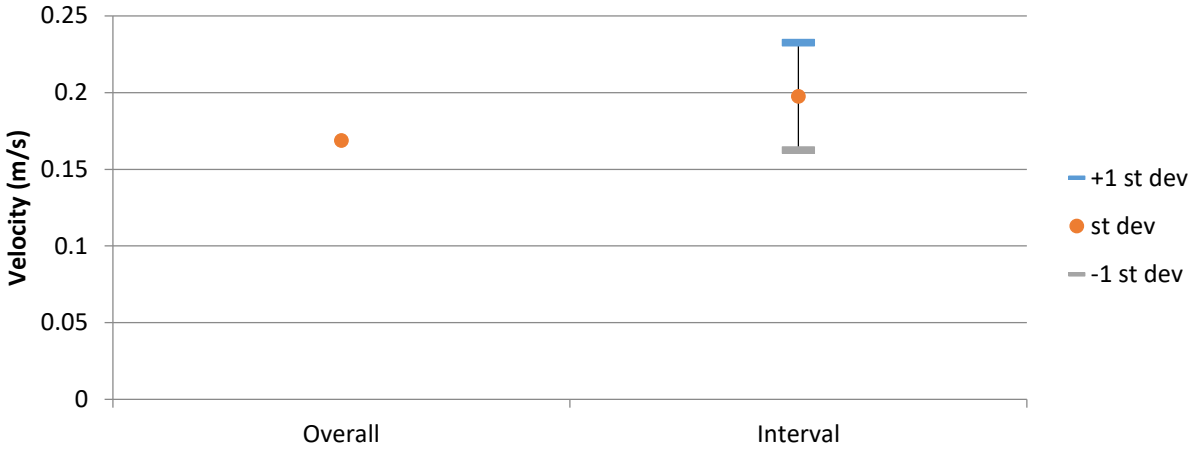


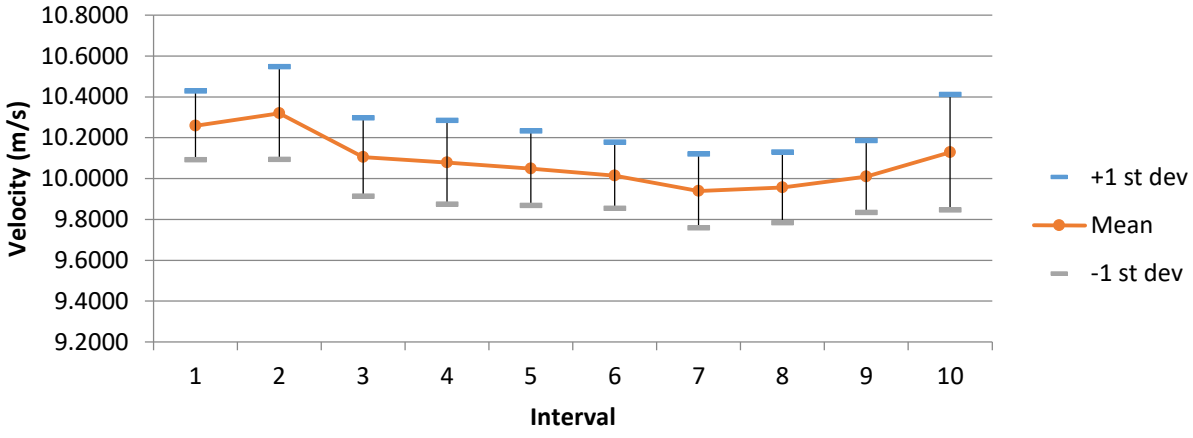
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 37
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 13-Aug-13
First Sample Time: 08:18:00.625

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.5444	10.0544	11.1123	0.2306
u	12.1000	9.3700	10.6965	0.2384
v	2.7300	-4.6900	-0.1862	0.9732
w	0.2930	-5.3600	-2.7170	0.8365

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.6810	10.5799	11.1284	0.1610	1.6753
2	11.9622	10.3542	11.0582	0.1853	1.5869
3	11.6034	10.3586	10.9470	0.1737	2.7094
4	12.4856	10.3773	11.2711	0.3054	2.2290
5	12.0660	10.3269	11.1185	0.2478	1.9901
6	11.8151	10.3931	11.1538	0.2220	1.8547
7	11.7636	10.3887	11.0847	0.2056	2.4040
8	12.5444	10.0544	11.1394	0.2678	1.6961
9	11.7662	10.4429	11.1035	0.1883	1.5301
10	11.7780	10.5527	11.1182	0.1701	1.9141
		Average	11.1123	0.2127	1.9590
		St Dev	0.0810	0.0475	0.3633

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.7278	-0.5642	-2.8599	0.1596	0.3365	0.3790	1.4873	3.1366	3.5329
2	10.6144	-1.0321	-2.8363	0.1674	0.4995	0.5156	1.5769	4.7062	4.8577
3	10.7716	-0.8492	-1.6109	0.1793	0.5366	0.4522	1.6646	4.9819	4.1982
4	10.9125	0.3317	-2.4886	0.2699	0.6616	1.1109	2.4737	6.0628	10.1802
5	10.6969	-1.2946	-2.6008	0.1991	0.6486	0.5976	1.8615	6.0630	5.5871
6	10.5482	-0.1606	-3.5108	0.2333	0.4250	0.7777	2.2122	4.0287	7.3729
7	10.7335	0.6290	-2.4678	0.1846	0.7615	0.7780	1.7199	7.0948	7.2488
8	10.7283	-0.4094	-2.5632	0.2723	1.2101	0.8873	2.5385	11.2793	8.2704
9	10.5252	0.8821	-3.3678	0.2446	0.4809	0.3625	2.3237	4.5690	3.4443
10	10.7065	0.6052	-2.8642	0.1848	0.4792	0.4233	1.7261	4.4755	3.9537

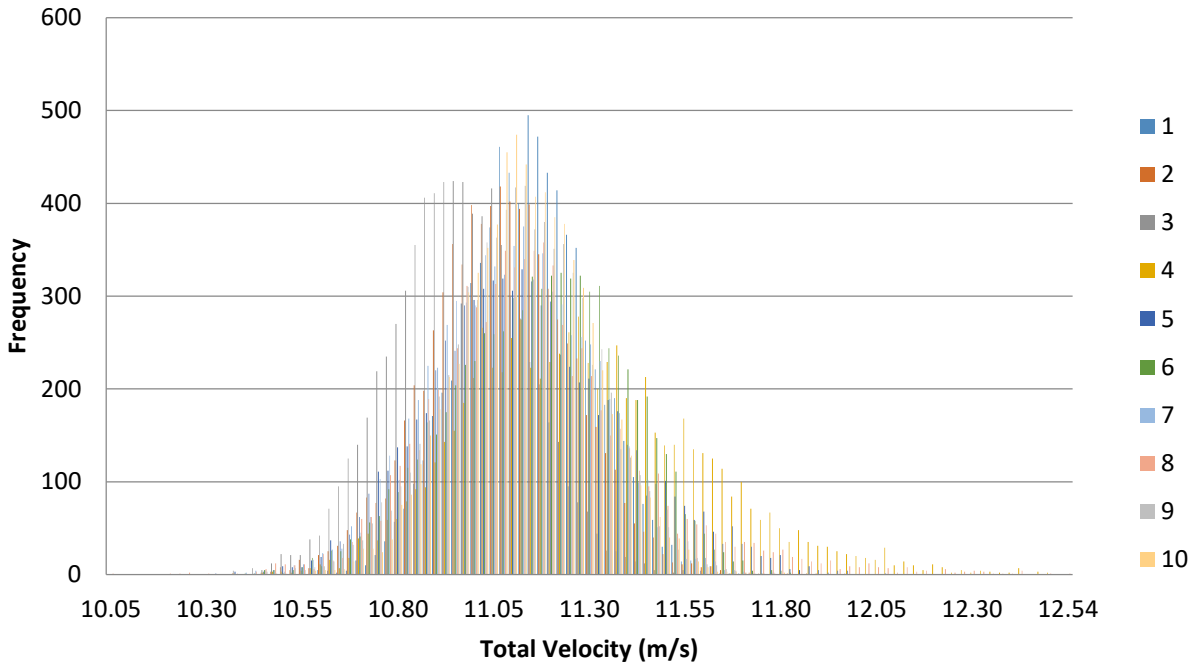


Figure 1. Velocity histogram for each interval (100 bins).

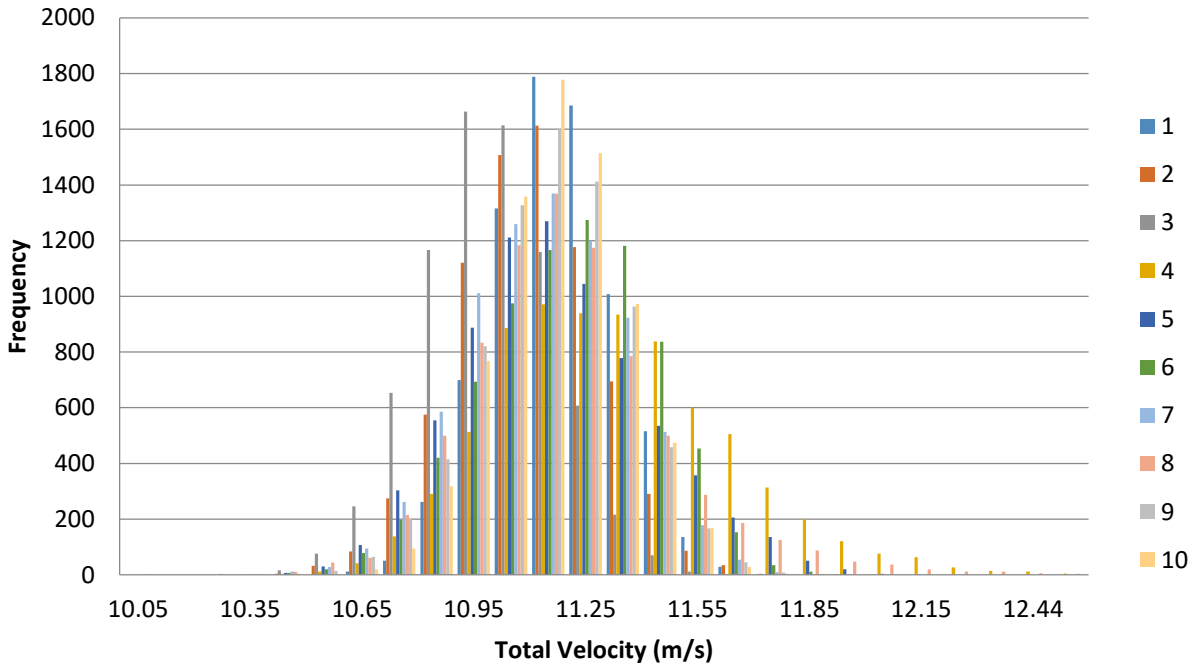
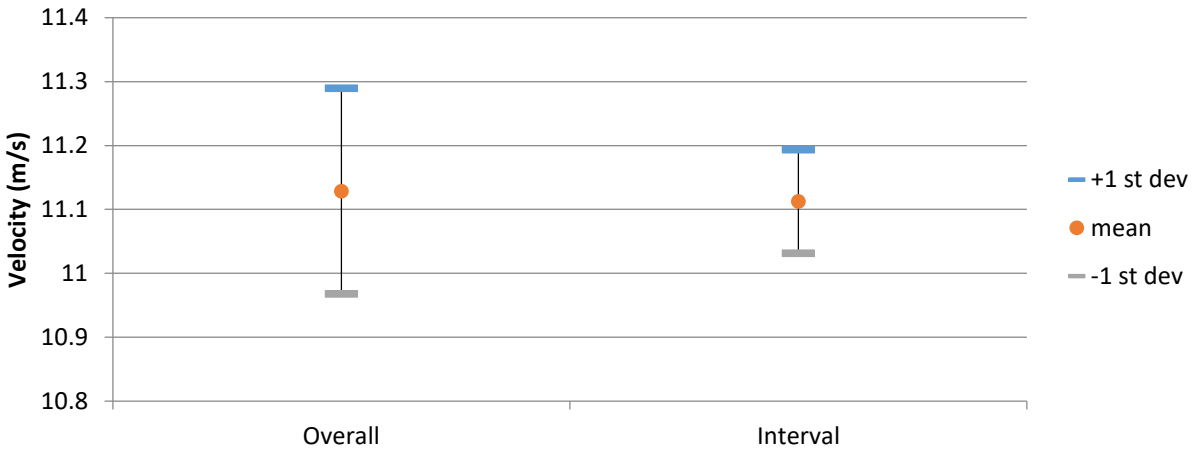
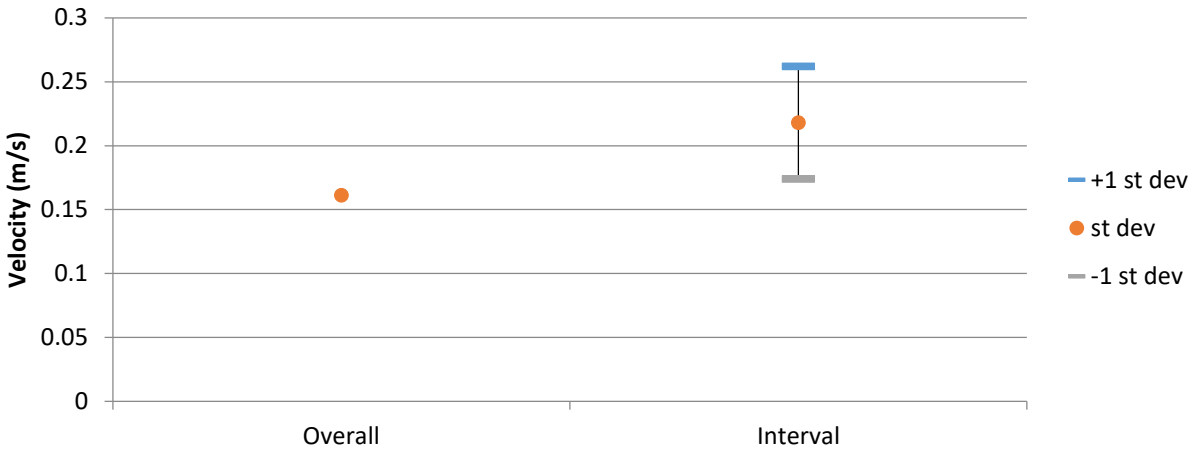


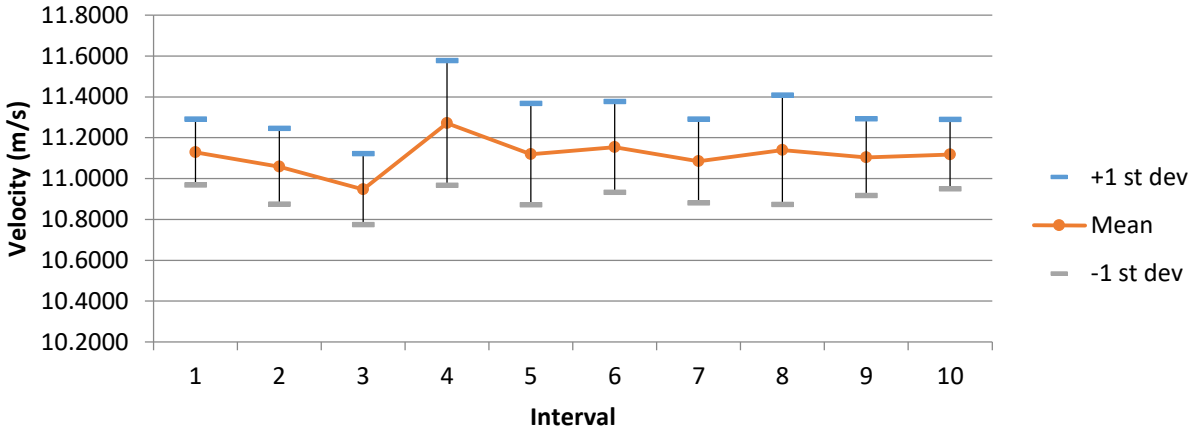
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 38
Blockage Condition: All Buildings.
Blower Frequency: 13 Hz
Inlet Probe Location: E3
First Sample Date: 13-Aug-13
First Sample Time: 08:31:59.843

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	3.2617	2.8239	3.0746	0.0516
u	3.1900	2.7600	2.9693	0.0520
v	0.5150	-0.6180	-0.0747	0.1952
w	-0.2710	-1.3200	-0.7434	0.2008

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	3.1509	2.9167	3.0380	0.0301	1.0360
2	3.1476	2.9050	3.0342	0.0314	1.0979
3	3.1695	2.9222	3.0427	0.0334	1.1065
4	3.1975	2.9369	3.0553	0.0338	1.4559
5	3.1984	2.8239	3.0524	0.0444	1.3182
6	3.2611	2.9538	3.1193	0.0411	1.1927
7	3.1700	2.8897	3.0545	0.0364	1.1241
8	3.2187	2.9613	3.0889	0.0347	1.1013
9	3.2475	2.9690	3.1380	0.0346	1.1433
10	3.2617	3.0037	3.1233	0.0357	1.1569
		Average	3.0746	0.0356	1.1733
		St Dev	0.0392	0.0043	0.1179

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	2.9734	-0.0316	-0.6175	0.0313	0.0419	0.0639	1.0528	1.4106	2.1497
2	2.9726	0.0116	-0.6011	0.0323	0.0447	0.0799	1.0868	1.5044	2.6872
3	2.9714	0.0054	-0.6504	0.0312	0.0394	0.0639	1.0516	1.3262	2.1499
4	2.9516	-0.0451	-0.7763	0.0365	0.0568	0.1205	1.2352	1.9234	4.0823
5	2.9526	-0.0036	-0.7534	0.0410	0.0767	0.1613	1.3880	2.5993	5.4646
6	2.9604	-0.0767	-0.9318	0.0690	0.1575	0.2524	2.3305	5.3206	8.5259
7	2.9610	-0.3349	-0.6473	0.0481	0.1140	0.1321	1.6245	3.8489	4.4603
8	2.9344	-0.4154	-0.8662	0.0331	0.0452	0.0770	1.1281	1.5394	2.6230
9	2.9590	-0.0798	-1.0275	0.0374	0.1554	0.0714	1.2627	5.2518	2.4129
10	3.0565	0.2228	-0.5627	0.0416	0.0934	0.1923	1.3618	3.0555	6.2914

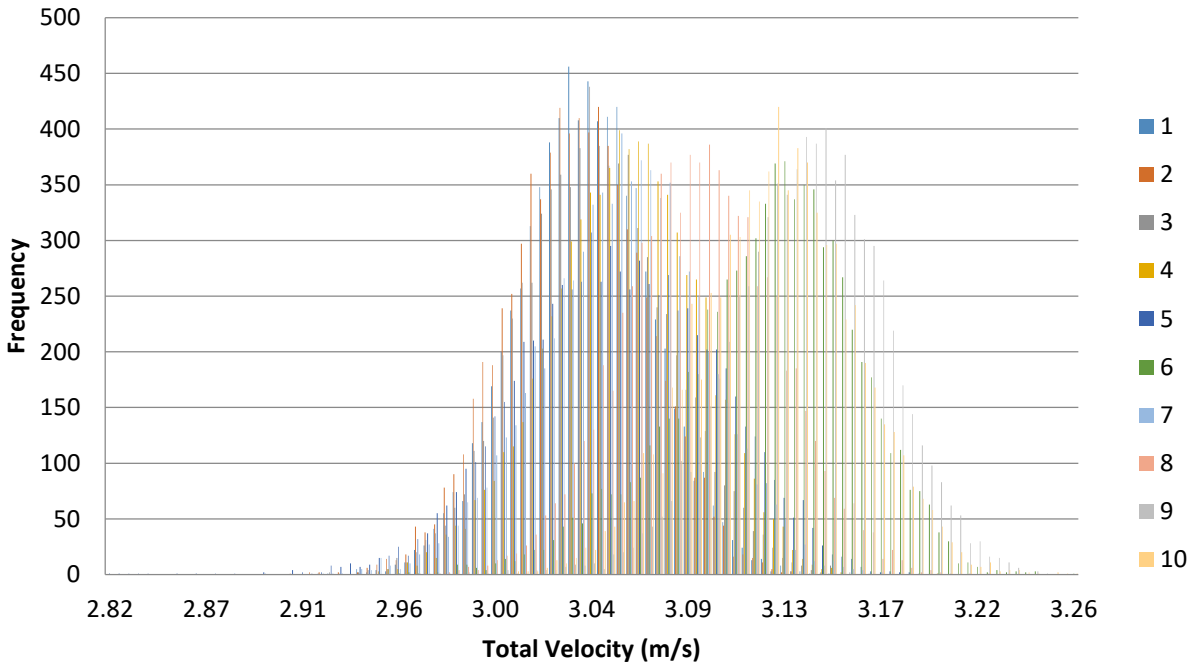


Figure 1. Velocity histogram for each interval (100 bins).

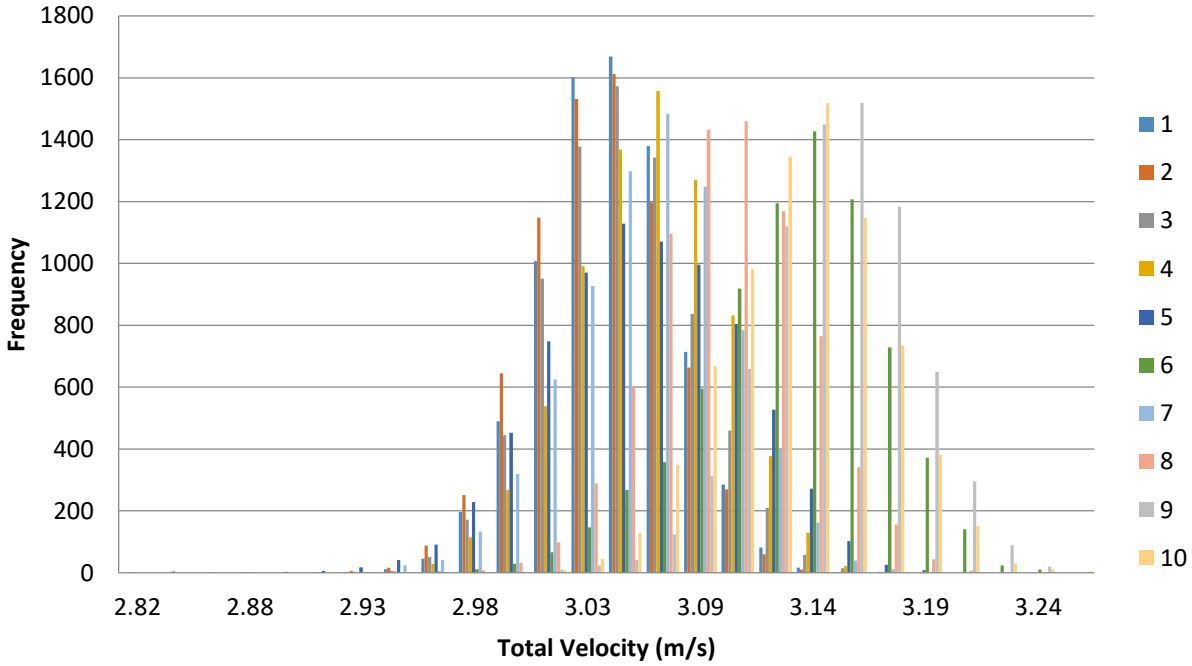
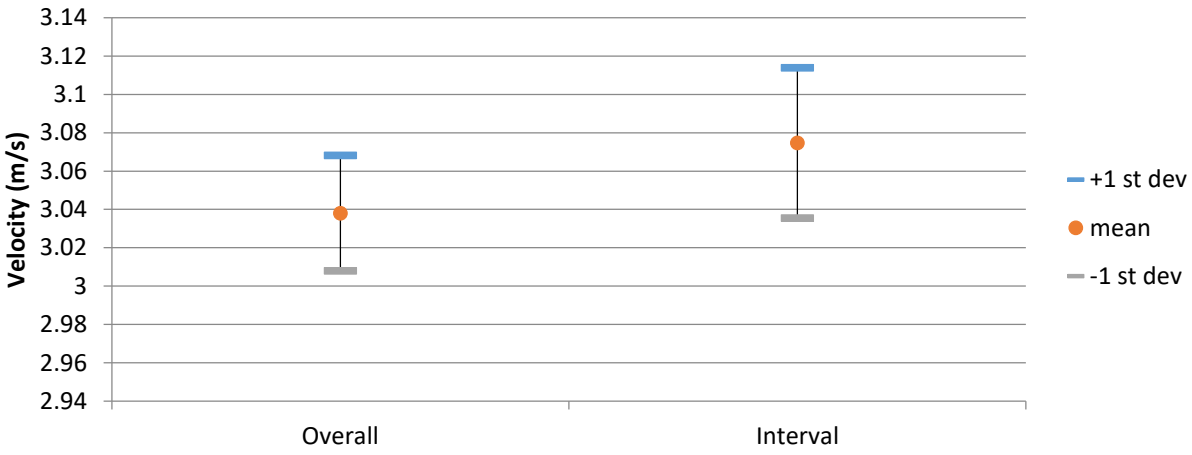
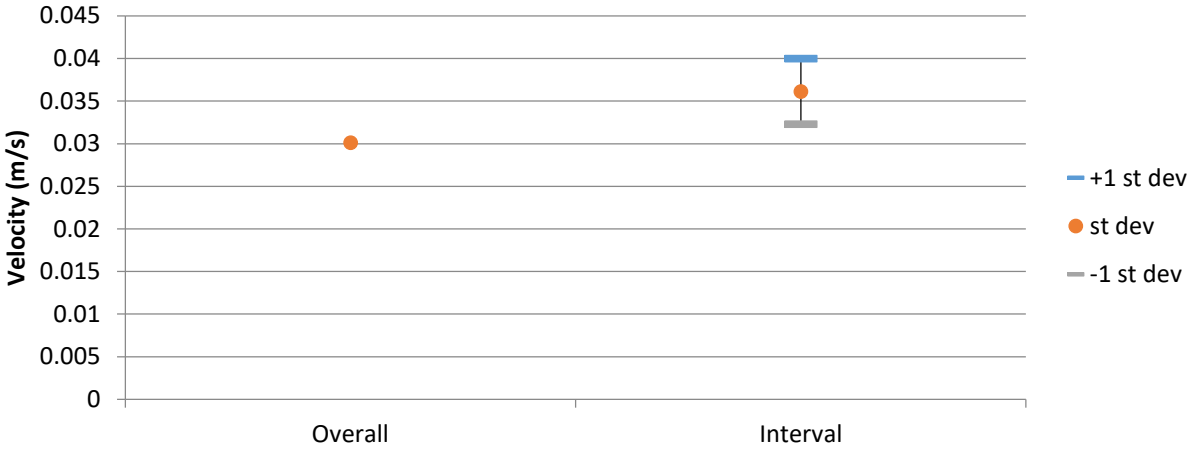


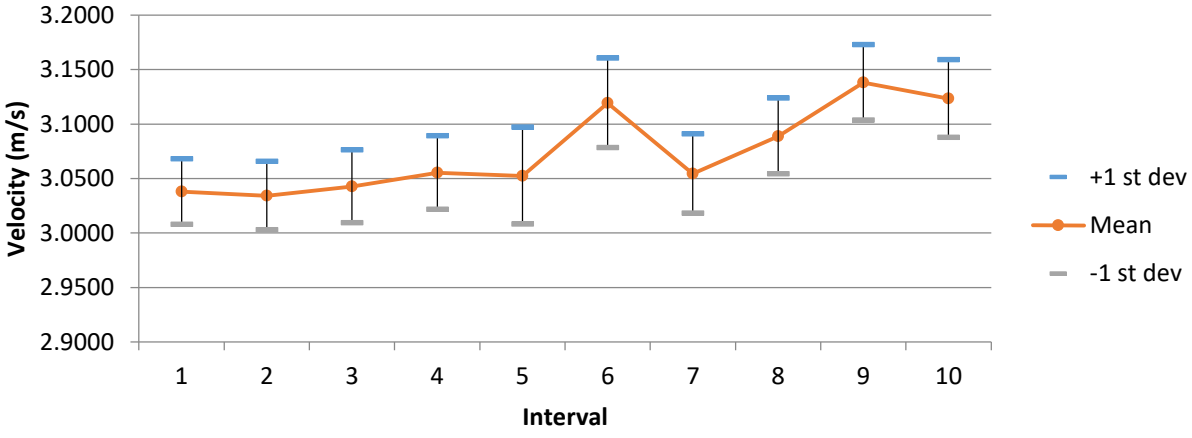
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 39
Blockage Condition: All buildings.
Blower Frequency: 20 Hz
Inlet Probe Location: E3
First Sample Date: 13-Aug-13
First Sample Time: 08:35:15.890

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	4.7815	4.2841	4.5767	0.0550
u	4.6000	3.9600	4.3368	0.0934
v	0.5010	-0.5580	-0.0316	0.1751
w	-0.7590	-1.9700	-1.4352	0.2046

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	4.7663	4.4212	4.5812	0.0447	1.3242
2	4.7543	4.3557	4.5720	0.0605	1.5238
3	4.7815	4.3120	4.5717	0.0697	1.1317
4	4.7635	4.3443	4.5764	0.0518	0.9778
5	4.7663	4.4053	4.5889	0.0449	1.0095
6	4.7507	4.4244	4.5953	0.0464	1.0655
7	4.7432	4.3886	4.5790	0.0488	1.2848
8	4.7695	4.2841	4.5694	0.0587	1.1862
9	4.7498	4.3372	4.5458	0.0539	1.0843
10	4.7573	4.3520	4.5877	0.0497	1.1562
		Average	4.5767	0.0529	1.1744
		St Dev	0.0137	0.0080	0.1565

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	4.3735	-0.2263	-1.3366	0.0485	0.0991	0.1090	1.1082	2.2650	2.4914
2	4.4235	-0.0798	-1.1330	0.0534	0.1139	0.1836	1.2064	2.5755	4.1502
3	4.2994	-0.0464	-1.5401	0.1073	0.1246	0.1389	2.4966	2.8983	3.2296
4	4.3190	0.0638	-1.4993	0.0849	0.0992	0.1517	1.9647	2.2965	3.5123
5	4.3652	0.1286	-1.3971	0.0585	0.1385	0.1174	1.3405	3.1730	2.6895
6	4.3838	0.0251	-1.3732	0.0569	0.0708	0.0766	1.2979	1.6141	1.7481
7	4.3929	-0.1177	-1.2743	0.0547	0.1125	0.1391	1.2446	2.5600	3.1673
8	4.3177	0.0588	-1.4812	0.0937	0.1144	0.1468	2.1713	2.6496	3.4001
9	4.1995	0.1572	-1.7286	0.0662	0.0792	0.0901	1.5766	1.8858	2.1452
10	4.2931	-0.2795	-1.5885	0.0517	0.1057	0.0560	1.2032	2.4623	1.3049

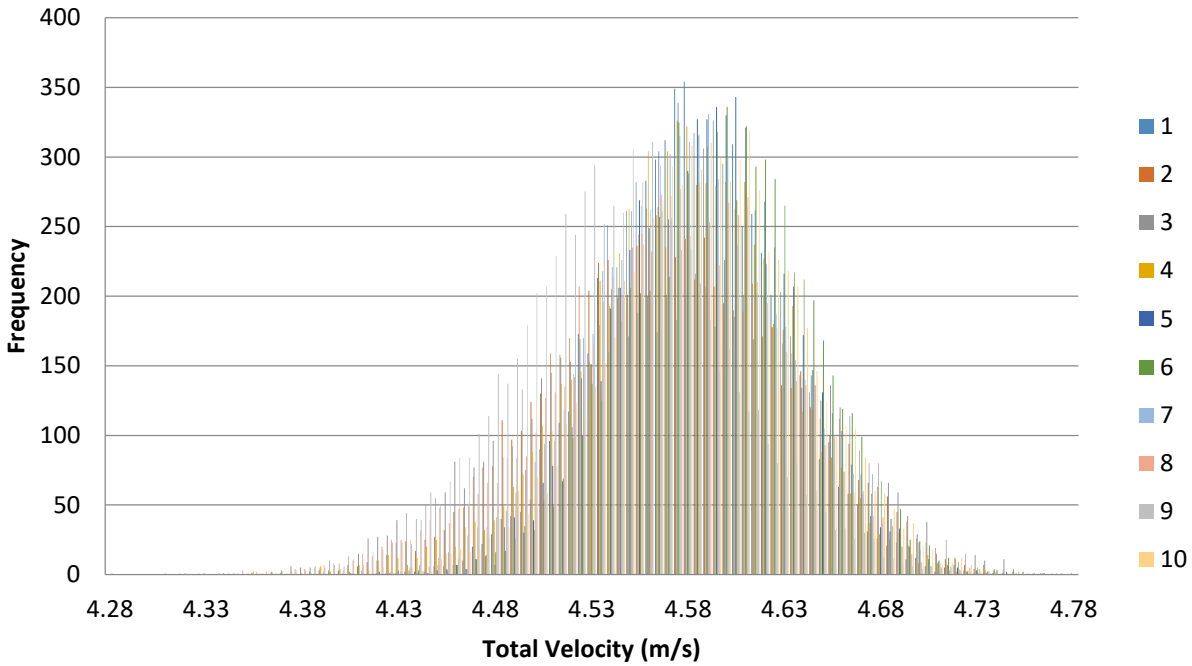


Figure 1. Velocity histogram for each interval (100 bins).

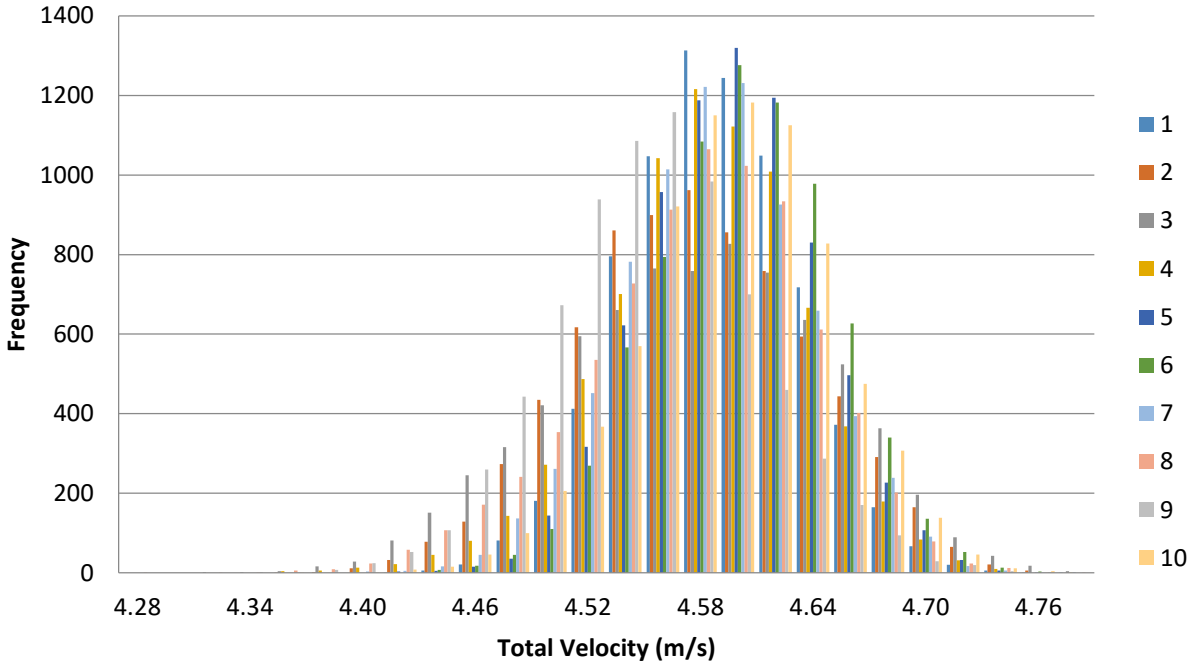
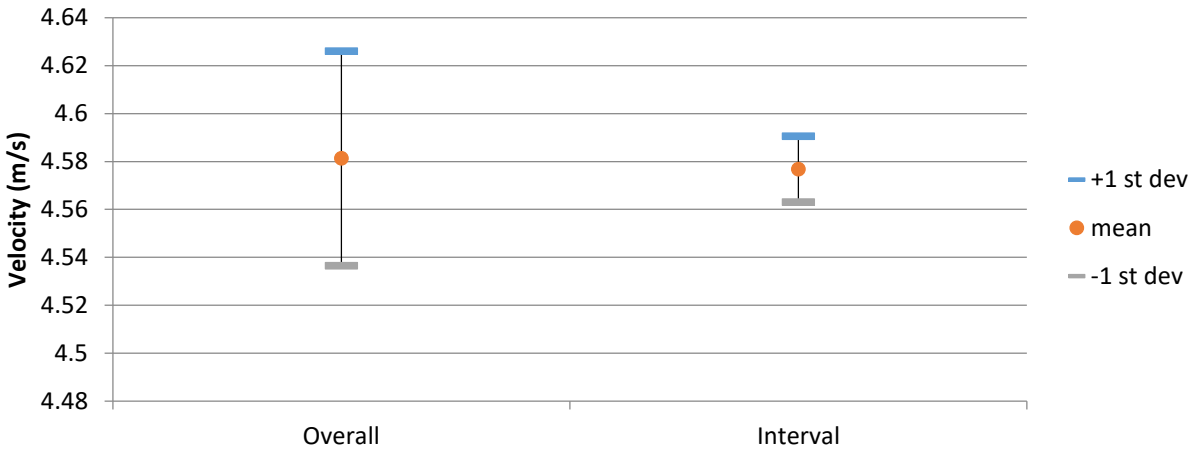
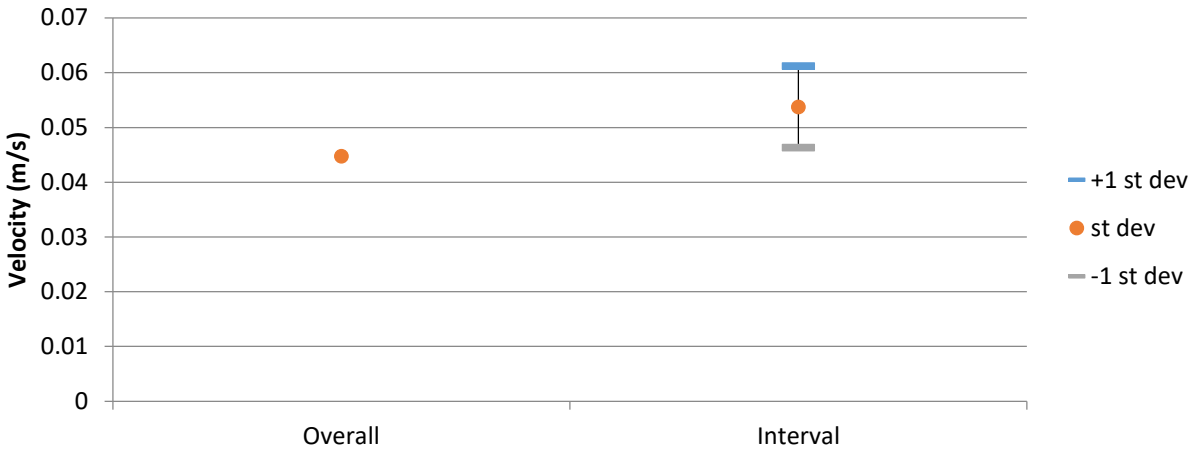


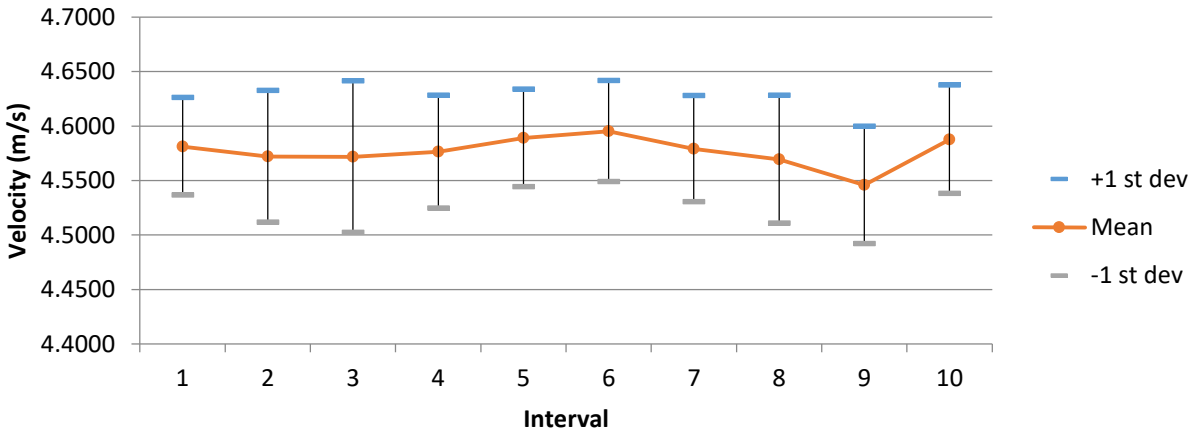
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 40
Blockage Condition: All Buildings.
Blower Frequency: 30 Hz
Inlet Probe Location: E3
First Sample Date: 13-Aug-13
First Sample Time: 08:37:50.718

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	7.7695	6.2120	6.8492	0.1459
u	7.6000	5.5800	6.5270	0.1703
v	2.8600	-1.2100	0.3742	0.6357
w	0.3270	-3.6100	-1.8708	0.5079

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	7.1651	6.4770	6.8069	0.0796	1.2106
2	7.0970	6.4527	6.7558	0.0818	1.2997
3	7.0844	6.3974	6.7594	0.0879	1.2243
4	7.0444	6.4574	6.7643	0.0828	2.1028
5	7.3821	6.5536	7.0212	0.1476	1.6558
6	7.3851	6.5380	6.9575	0.1152	2.3916
7	7.7695	6.2120	6.9841	0.1670	1.4376
8	7.1939	6.4953	6.8845	0.0990	1.3022
9	7.1260	6.3823	6.8068	0.0886	1.2290
10	7.1200	6.4208	6.7519	0.0830	1.5075
		Average	6.8492	0.1033	1.5361
		St Dev	0.1043	0.0307	0.3855

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	6.4330	-0.0241	-2.2160	0.0925	0.1080	0.1559	1.4376	1.6793	2.4232
2	6.5512	-0.2053	-1.5724	0.0906	0.3841	0.2429	1.3826	5.8629	3.7079
3	6.5266	0.0133	-1.7229	0.0875	0.2256	0.2720	1.3408	3.4567	4.1680
4	6.5119	0.2970	-1.7650	0.0854	0.3328	0.1884	1.3116	5.1106	2.8932
5	6.6251	1.0000	-2.0350	0.1220	0.4861	0.1863	1.8411	7.3368	2.8124
6	6.3992	0.9948	-2.4434	0.2667	0.2815	0.6001	4.1672	4.3991	9.3774
7	6.7577	1.2341	-0.9779	0.1980	0.5398	0.5740	2.9300	7.9881	8.4944
8	6.5055	0.6695	-2.1200	0.1477	0.2330	0.2558	2.2707	3.5821	3.9316
9	6.4627	0.1726	-2.0906	0.1007	0.3565	0.1896	1.5579	5.5161	2.9331
10	6.4974	-0.4100	-1.7651	0.0834	0.2051	0.2158	1.2828	3.1574	3.3212

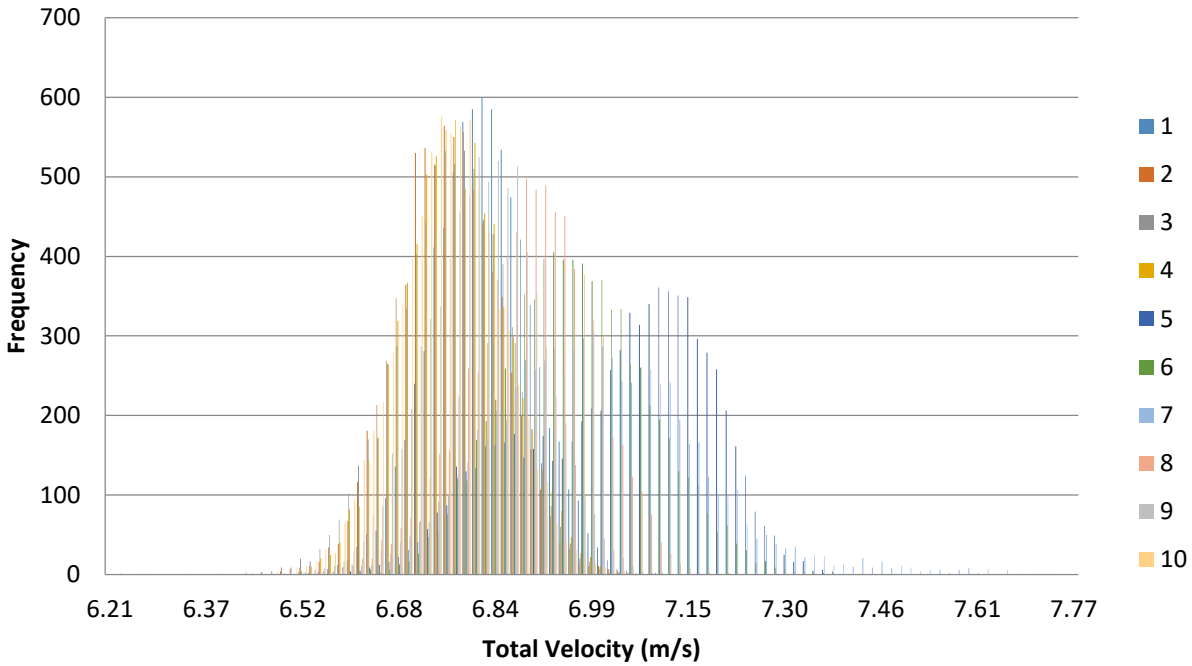


Figure 1. Velocity histogram for each interval (100 bins).

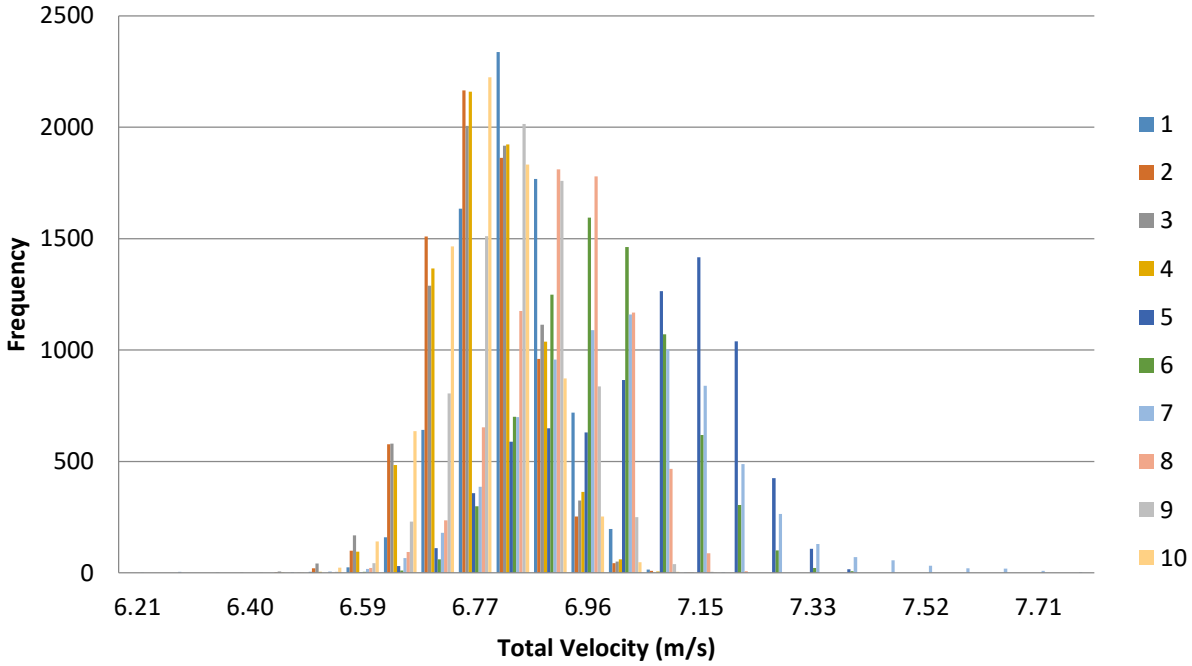
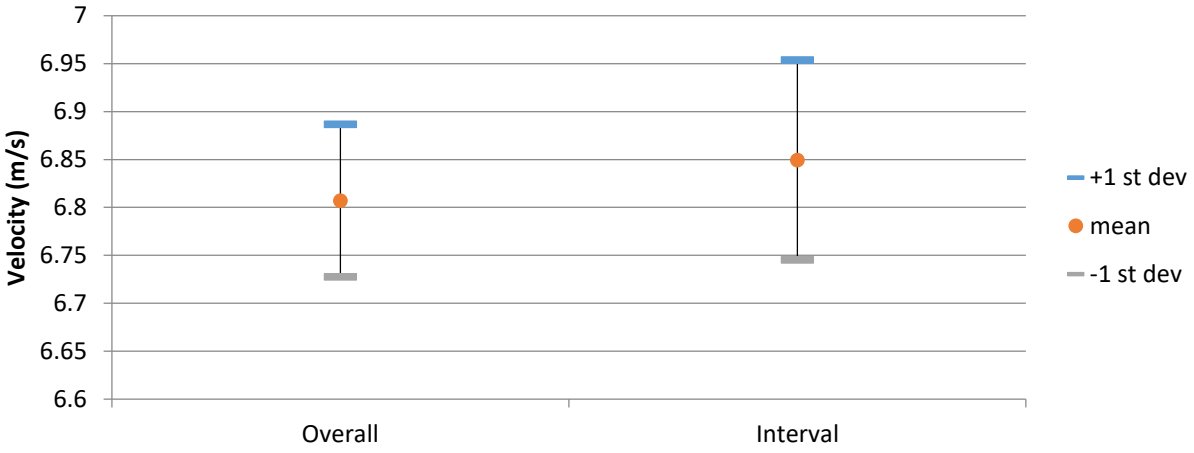
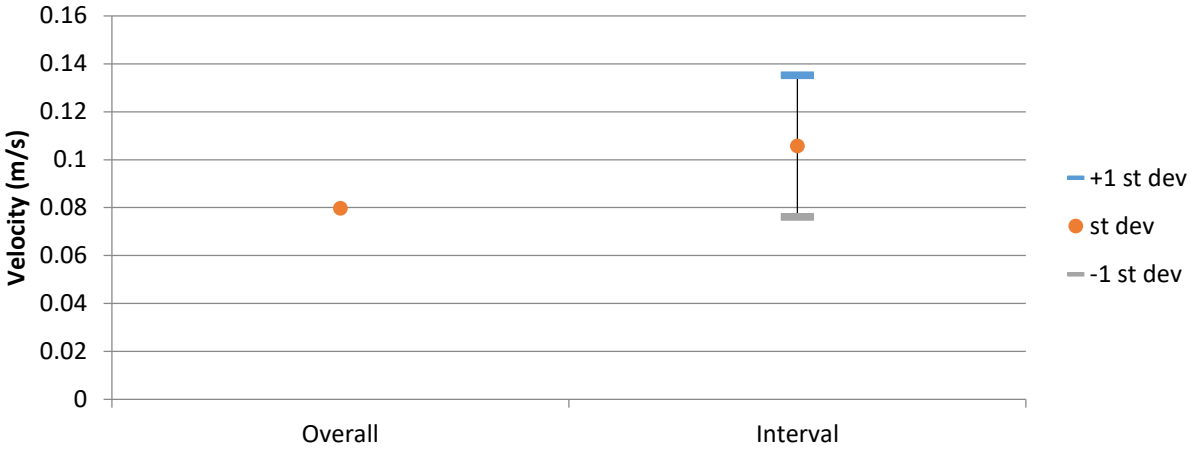


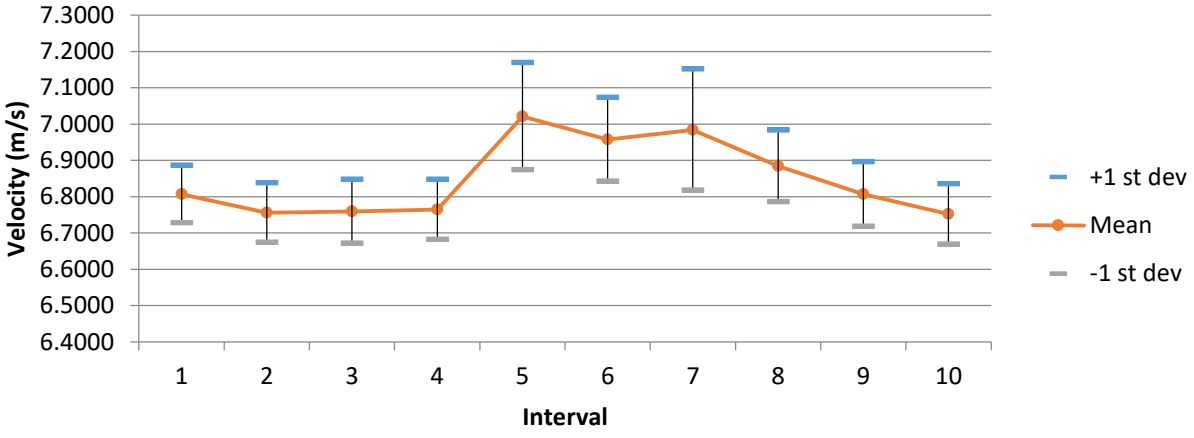
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 41
Blockage Condition: All Buildings.
Blower Frequency: 40 Hz
Inlet Probe Location: E3
First Sample Date: 13-Aug-13
First Sample Time: 08:39:53.171

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	9.9319	7.9477	8.8447	0.1536
u	9.8000	7.9000	8.6704	0.1672
v	1.6000	-2.4800	-0.5452	0.6621
w	1.4200	-2.9900	-1.3748	0.6501

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	9.6123	8.0127	8.8267	0.1538	1.9766
2	9.5239	7.9477	8.7846	0.1736	1.5456
3	9.2340	8.1501	8.7830	0.1357	1.3917
4	9.3616	8.3361	8.8974	0.1238	1.5689
5	9.4697	8.1592	8.8525	0.1389	1.9092
6	9.9319	8.2560	8.9072	0.1701	1.6540
7	9.5058	8.3944	8.9256	0.1476	1.6592
8	9.4411	8.2874	8.8258	0.1464	1.3564
9	9.2068	8.3827	8.7893	0.1192	1.5169
10	9.6495	8.3441	8.8548	0.1343	1.6321
		Average	8.8447	0.1444	1.6211
		St Dev	0.0522	0.0179	0.1882

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.5941	-1.5984	-1.1418	0.1501	0.3136	0.3106	1.7471	3.6485	3.6146
2	8.6543	-1.0296	-0.9046	0.1823	0.3924	0.4879	2.1068	4.5340	5.6379
3	8.6645	-0.5431	-1.2357	0.1387	0.4198	0.2614	1.6011	4.8451	3.0166
4	8.6977	0.2585	-1.7895	0.1307	0.2739	0.4089	1.5024	3.1495	4.7013
5	8.7490	0.2085	-1.0667	0.1510	0.3328	0.7246	1.7263	3.8039	8.2826
6	8.8456	-0.4064	-0.4643	0.1558	0.4701	0.7057	1.7613	5.3150	7.9777
7	8.6765	-0.0118	-2.0011	0.1388	0.4608	0.4134	1.5995	5.3105	4.7644
8	8.6227	-0.7476	-1.6314	0.1503	0.3703	0.4299	1.7427	4.2945	4.9855
9	8.5457	-0.9458	-1.8153	0.1180	0.1266	0.1296	1.3808	1.4812	1.5160
10	8.6539	-0.6364	-1.6979	0.1509	0.3333	0.3359	1.7435	3.8516	3.8820

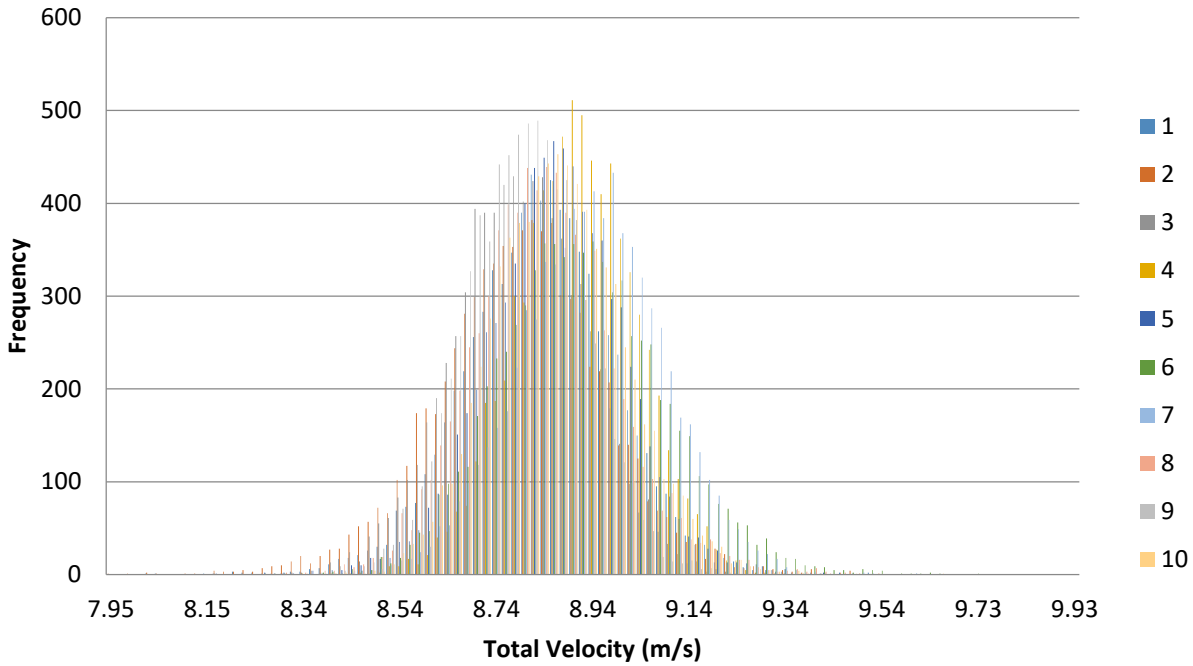


Figure 1. Velocity histogram for each interval (100 bins).

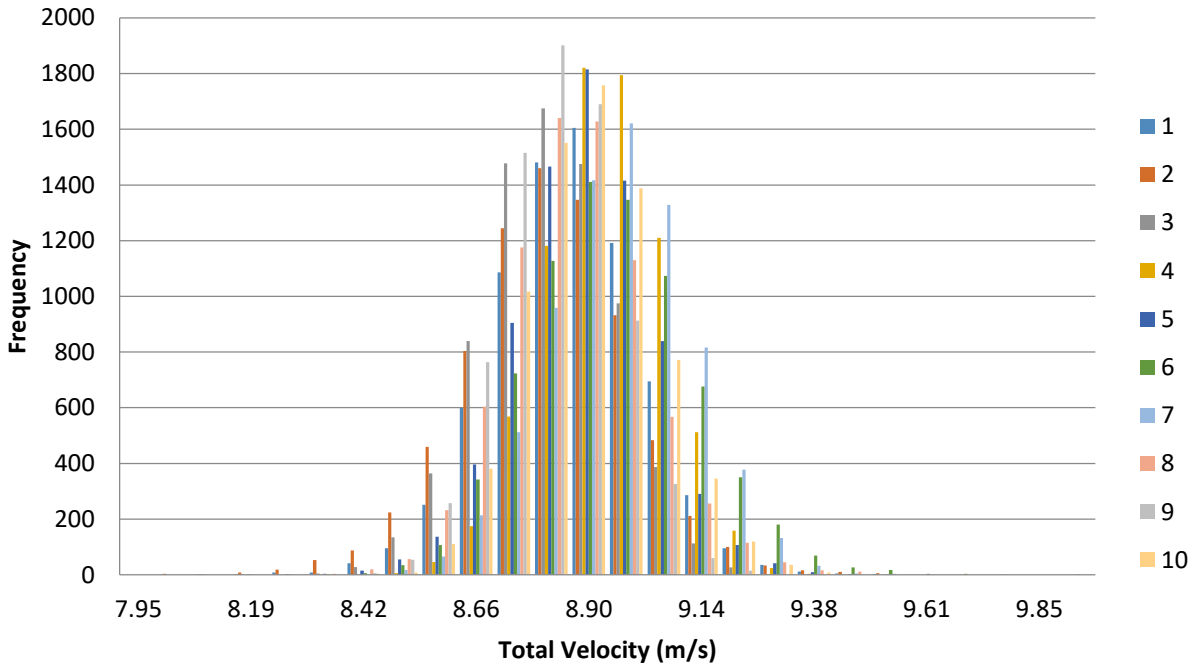
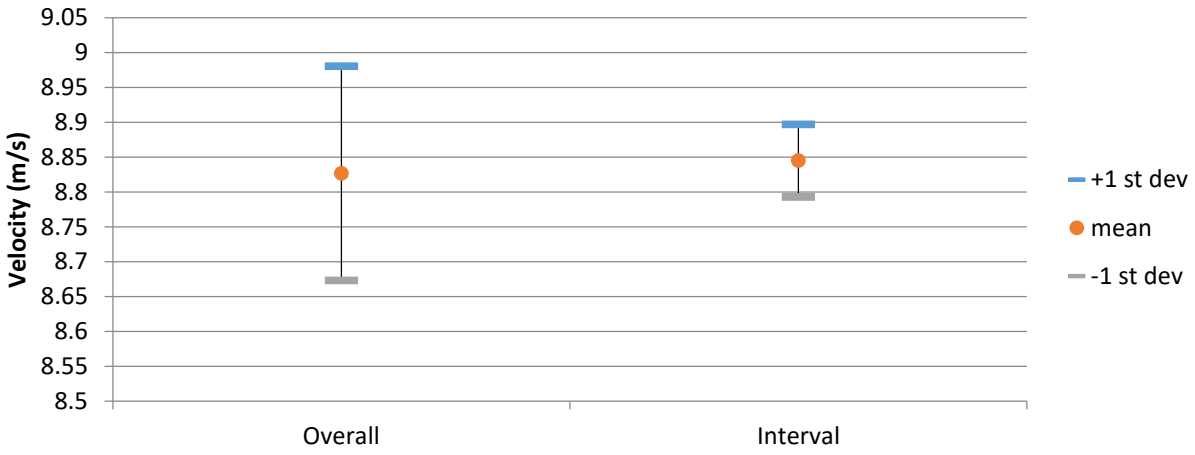
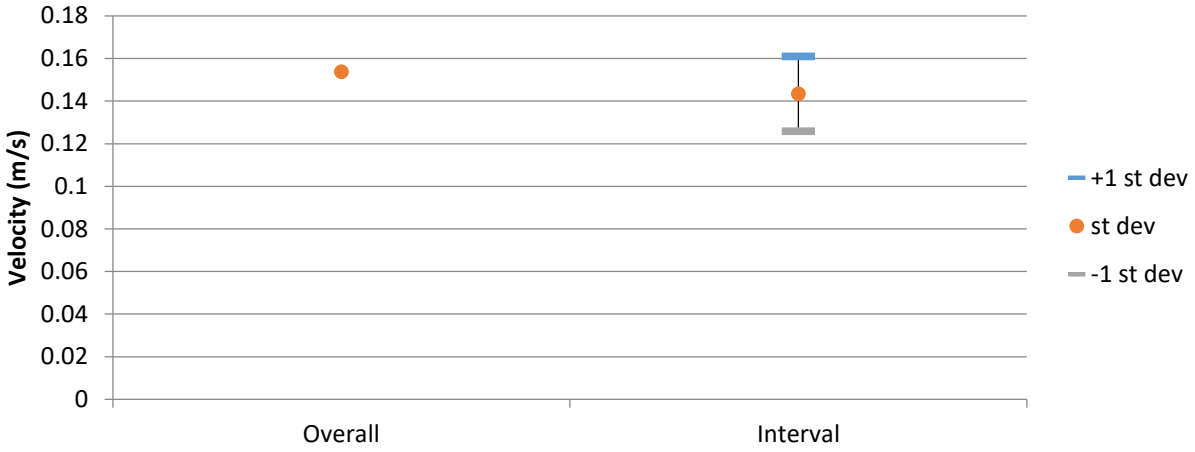


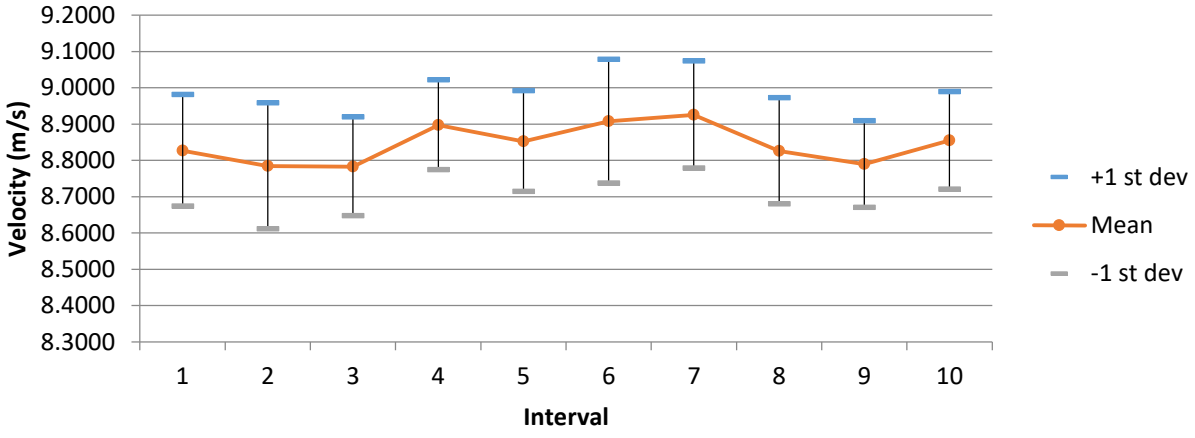
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 42
Blockage Condition: All buildings.
Blower Frequency: 45 Hz
Inlet Probe Location: E3
First Sample Date: 13-Aug-13
First Sample Time: 08:41:56.156

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.1803	9.0840	9.9860	0.1944
u	10.7000	8.8200	9.6808	0.1654
v	0.8400	-3.3700	-0.9352	0.5172
w	-0.3900	-4.2600	-2.1383	0.5459

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	10.6201	9.4329	10.0104	0.1670	2.2843
2	10.9859	9.0842	10.1467	0.2318	1.8871
3	10.8112	9.2877	9.9890	0.1885	1.8767
4	10.8186	9.3363	9.9857	0.1874	1.4382
5	10.5767	9.3525	9.9567	0.1432	1.4631
6	10.7121	9.5943	10.0624	0.1472	1.9832
7	11.1803	9.1763	10.0724	0.1998	1.5563
8	10.5312	9.0840	9.8775	0.1537	1.4782
9	10.3942	9.2079	9.8532	0.1457	1.5148
10	10.5049	9.3900	9.9062	0.1501	1.7167
		Average	9.9860	0.1714	1.7199
		St Dev	0.0921	0.0295	0.2670

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.6908	-0.7679	-2.2804	0.1580	0.5122	0.4968	1.6307	5.2857	5.1270
2	9.7024	-1.3165	-2.5321	0.1772	0.4977	0.6697	1.8259	5.1294	6.9024
3	9.6724	-1.2135	-2.0626	0.1602	0.4476	0.5546	1.6563	4.6277	5.7336
4	9.6061	-1.2368	-2.3251	0.1546	0.5962	0.3968	1.6095	6.2061	4.1309
5	9.7892	-0.7107	-1.5757	0.1466	0.4448	0.3477	1.4980	4.5438	3.5523
6	9.7563	-0.4868	-2.3684	0.1452	0.3603	0.3038	1.4880	3.6929	3.1144
7	9.6761	-1.0849	-2.4371	0.1757	0.5805	0.6176	1.8160	5.9991	6.3830
8	9.6411	-0.7805	-1.9349	0.1539	0.3317	0.3884	1.5963	3.4402	4.0285
9	9.6559	-0.7352	-1.7585	0.1463	0.2788	0.3700	1.5152	2.8876	3.8318
10	9.6180	-1.0196	-2.1080	0.1388	0.2657	0.2765	1.4427	2.7621	2.8745

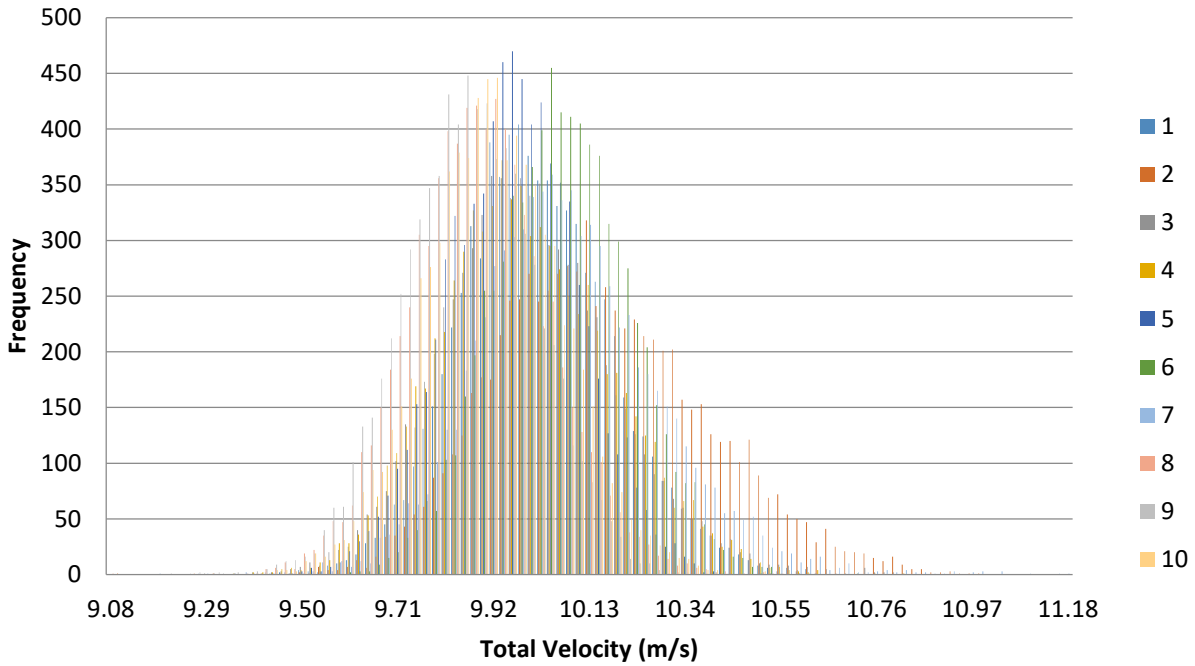


Figure 1. Velocity histogram for each interval (100 bins).

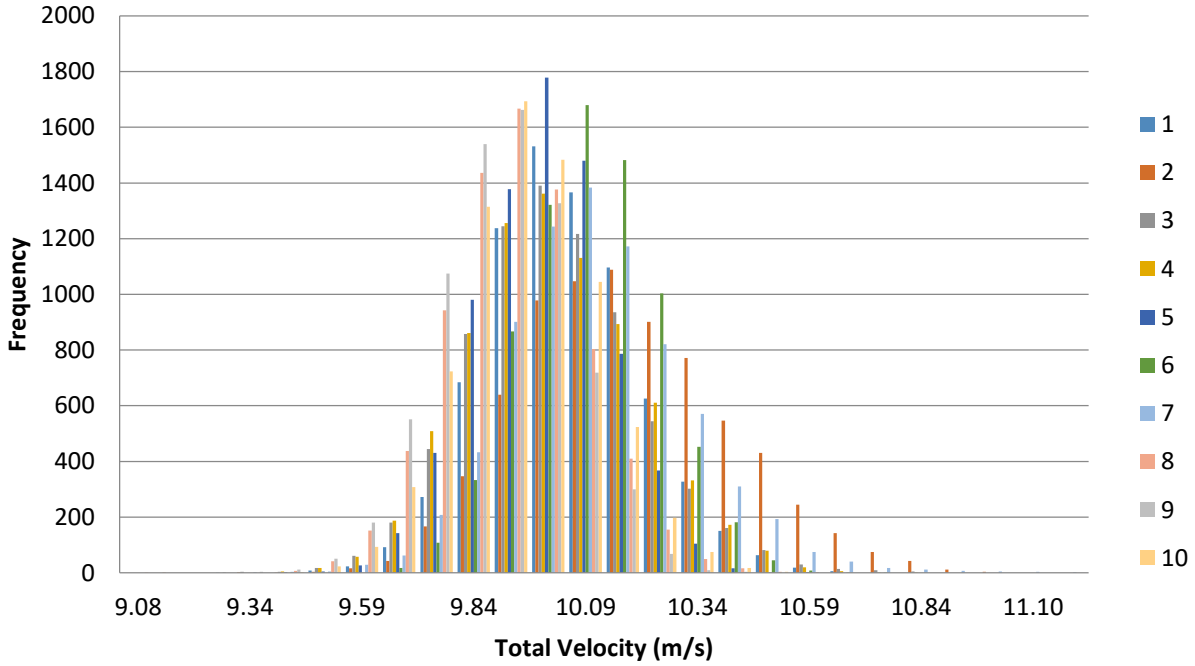
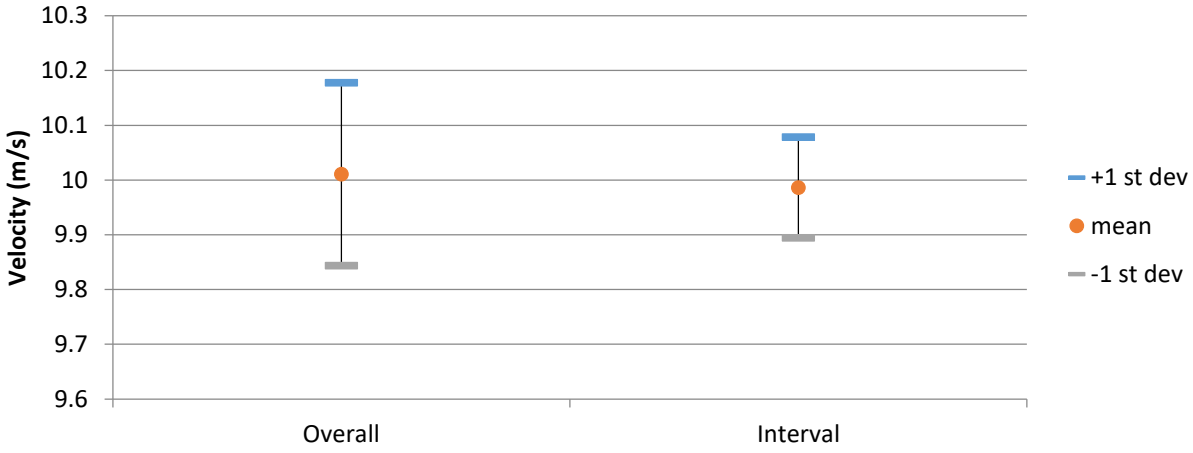
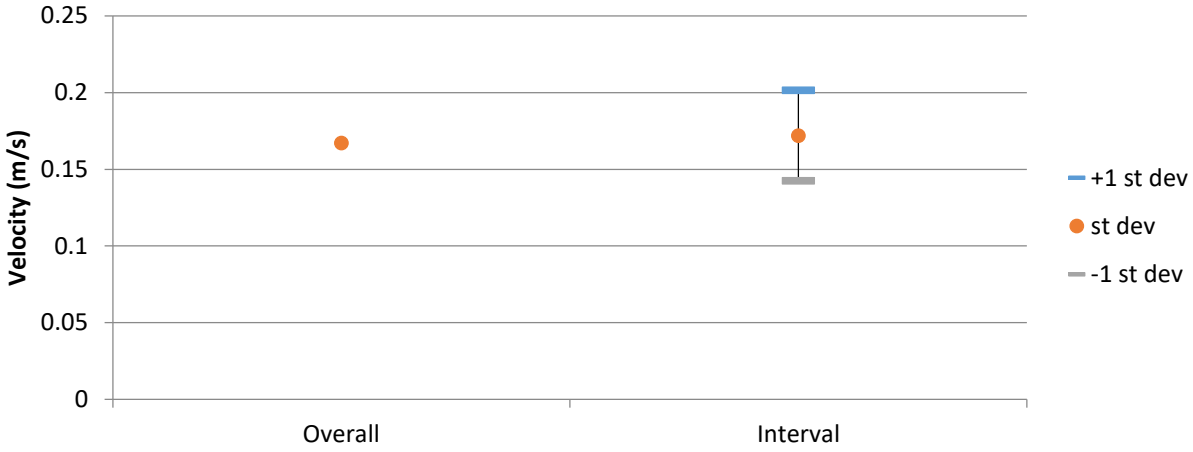


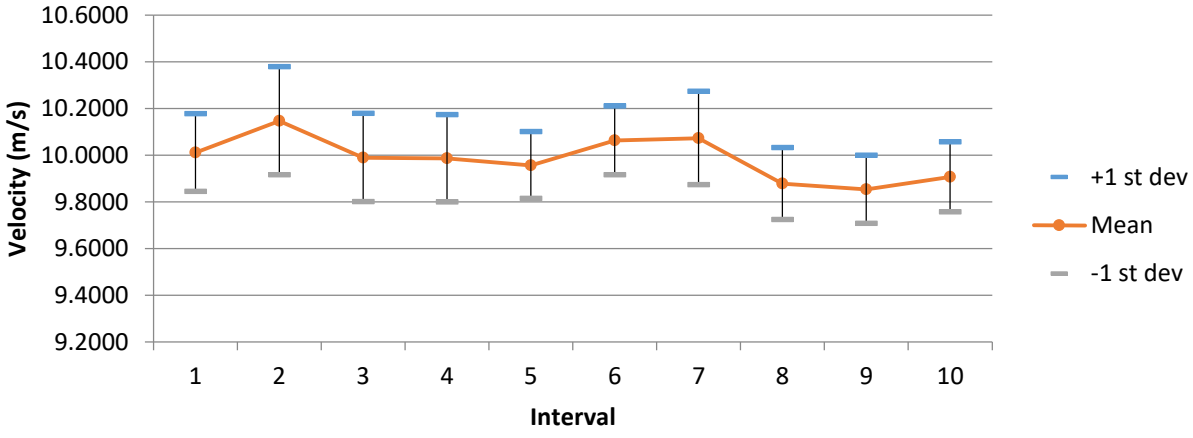
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 44
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 13-Aug-13
First Sample Time: 09:19:09.000

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.0064	9.1427	10.3385	0.2567
u	11.5000	9.0900	10.2079	0.2530
v	4.2900	-3.2700	0.8913	0.6851
w	1.3500	-4.3400	-1.0536	0.5572

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.0425	9.4666	10.2541	0.2275	2.2408
2	11.1669	9.4261	10.2263	0.2291	2.1273
3	11.1277	9.4691	10.3336	0.2198	2.1427
4	11.2576	9.4375	10.3330	0.2214	2.2683
5	12.0064	9.6050	10.3528	0.2348	2.4988
6	11.5426	9.4701	10.4879	0.2621	2.4406
7	11.5483	9.5814	10.4710	0.2556	2.0764
8	11.3267	9.5898	10.4025	0.2160	2.2780
9	11.1196	9.3015	10.2374	0.2332	2.9209
10	11.8751	9.1427	10.2860	0.3004	2.3214
		Average	10.3385	0.2400	2.3315
		St Dev	0.0924	0.0259	0.2334

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.1928	0.4048	-0.9255	0.2366	0.3940	0.2724	2.3209	3.8658	2.6730
2	10.1393	0.9367	-0.7348	0.2422	0.3912	0.4423	2.3889	3.8587	4.3621
3	10.2233	0.9044	-1.0124	0.2383	0.4838	0.4285	2.3308	4.7327	4.1911
4	10.2483	0.6902	-0.9882	0.2368	0.4176	0.3315	2.3111	4.0749	3.2351
5	10.2244	1.3094	-0.7933	0.2487	0.3749	0.3867	2.4328	3.6670	3.7822
6	10.2520	1.6254	-1.2582	0.2511	0.5299	0.6275	2.4492	5.1685	6.1205
7	10.2885	1.5288	-0.9512	0.2771	0.4228	0.5973	2.6931	4.1091	5.8054
8	10.2277	1.1559	-1.3722	0.2450	0.4458	0.4203	2.3954	4.3589	4.1098
9	10.1167	0.3338	-1.4010	0.2408	0.4969	0.3653	2.3807	4.9113	3.6110
10	10.1663	0.0243	-1.0998	0.2584	0.6317	0.9287	2.5413	6.2135	9.1355

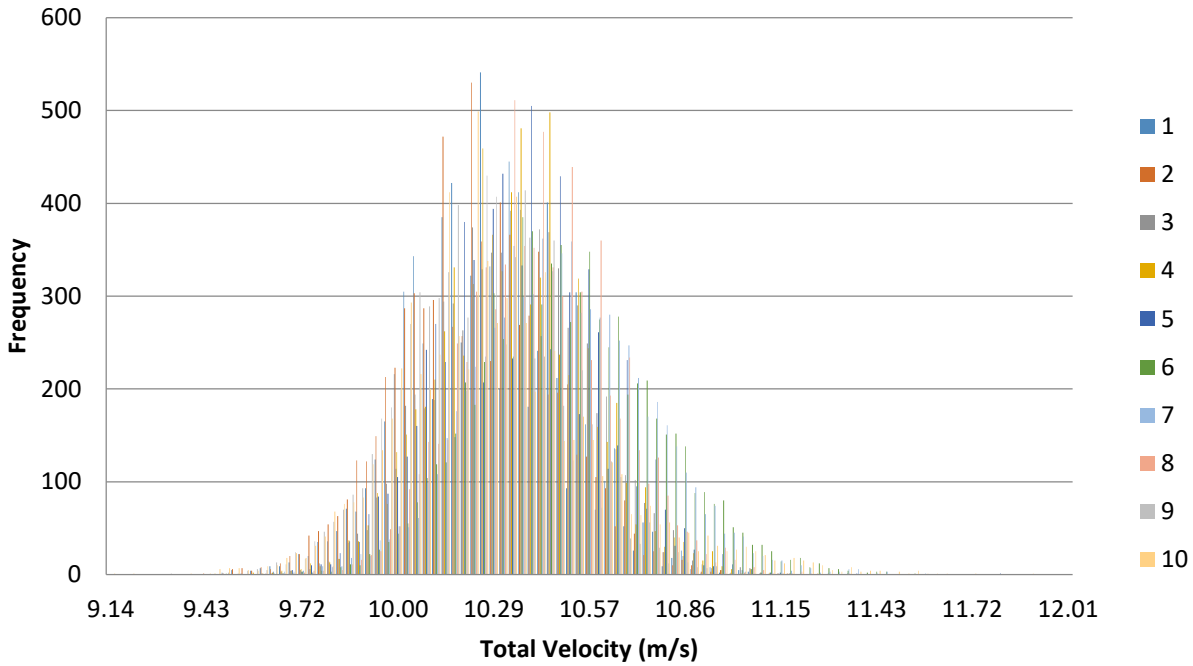


Figure 1. Velocity histogram for each interval (100 bins).

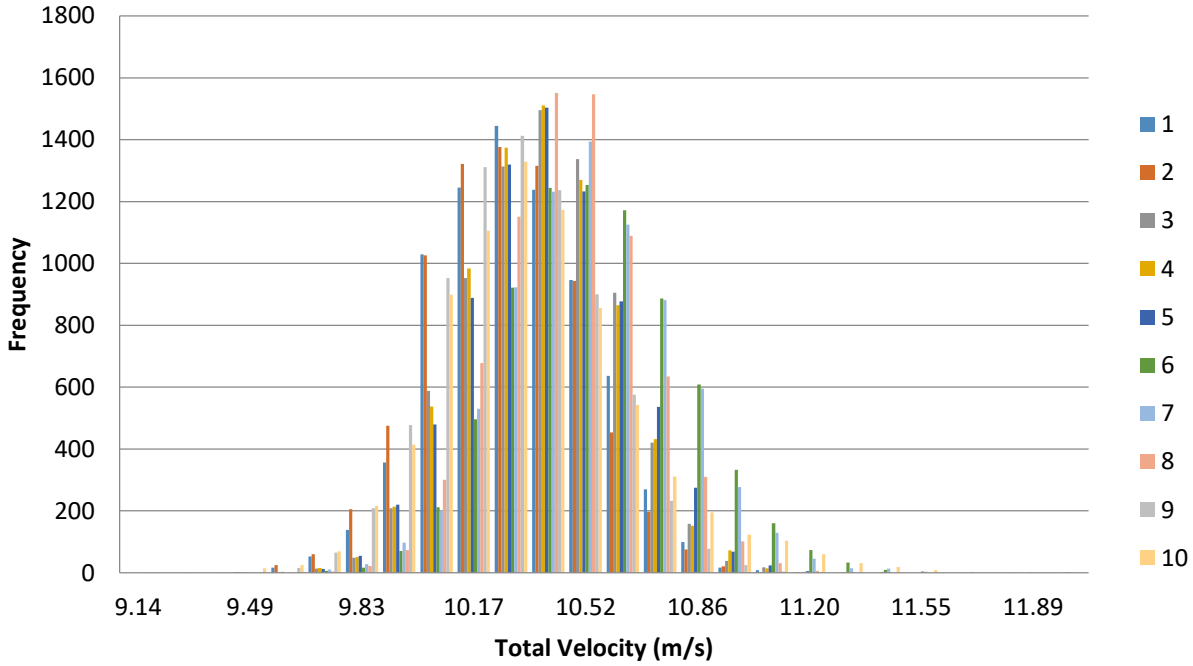
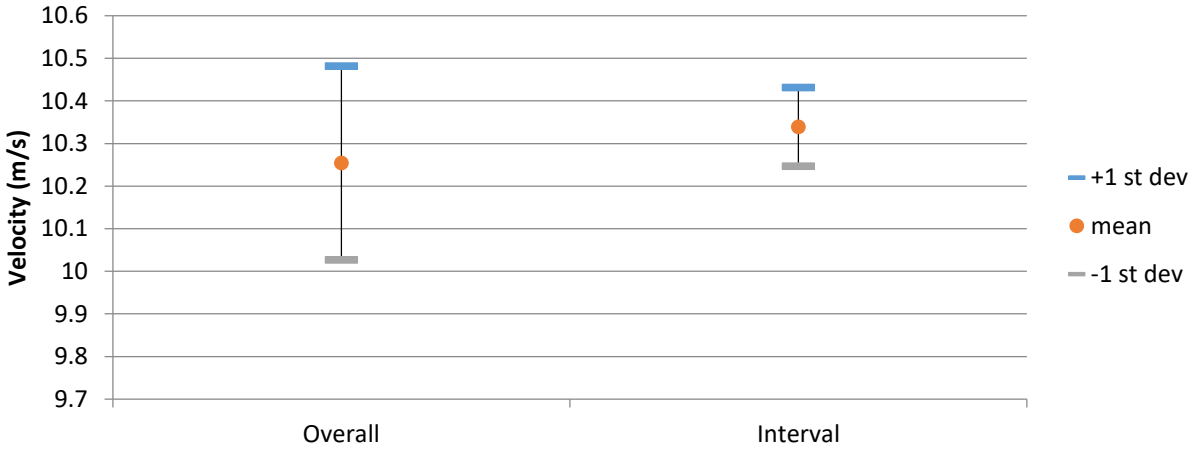
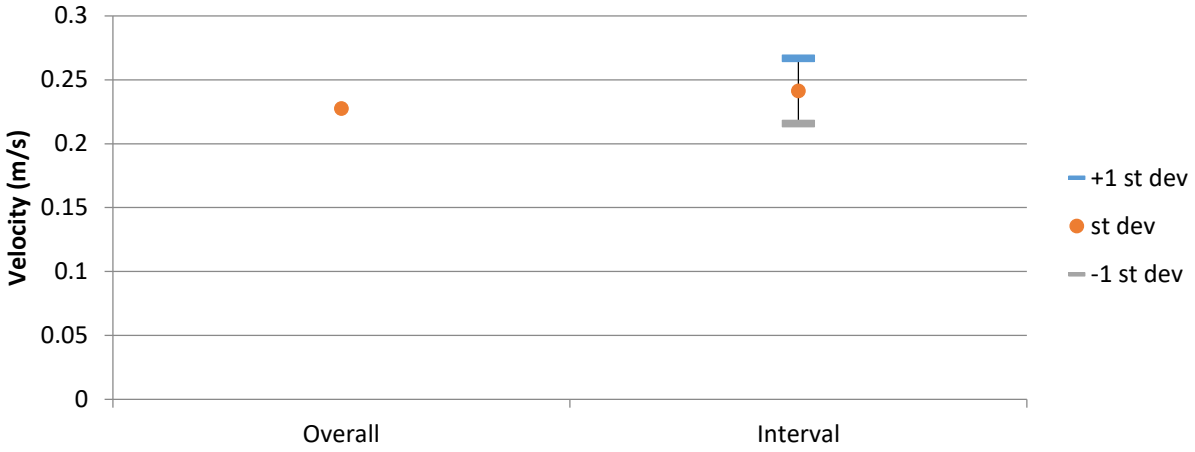


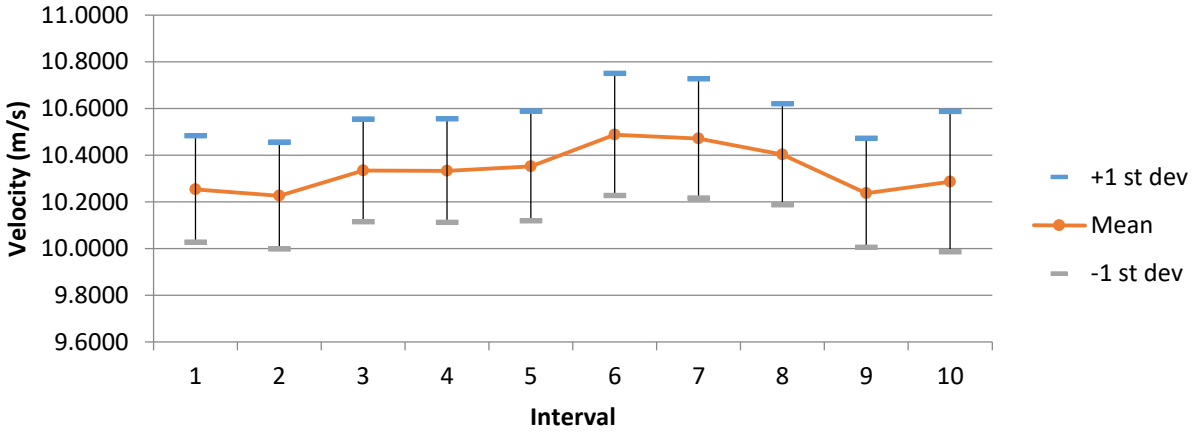
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 45
Blockage Condition: All Buildings
Blower Frequency: 50 Hz
Inlet Probe Location: E5
First Sample Date: 13-Aug-13
First Sample Time: 09:23:47.015

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	6.6388	0.2274	2.7388	1.0292
u	6.3700	0.2060	2.5838	1.0317
v	1.6200	-2.1900	-0.6619	0.5289
w	1.7200	-1.7400	-0.0166	0.3190

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	6.2182	0.6099	2.8108	1.0577	37.6290	3878	31.02 %
2	6.1102	0.4491	2.8274	1.0432	36.8971	3891	31.13 %
3	6.0925	0.4626	2.7949	1.0304	36.8680	3867	30.94 %
4	6.3964	0.4877	2.7071	1.0159	37.5270	3854	30.83 %
5	6.6388	0.3489	2.7504	1.0461	38.0351	3842	30.74 %
6	6.5373	0.5390	2.7809	1.0571	38.0127	3841	30.73 %
7	6.2476	0.2274	2.7592	1.0425	37.7844	3880	31.04 %
8	6.0443	0.3970	2.6324	0.9911	37.6485	3980	31.84 %
9	5.8216	0.3763	2.6164	0.9618	36.7592	3952	31.62 %
10	6.0077	0.5391	2.7026	1.0176	37.6540	3904	31.23 %
		Average	2.7382	1.0263	37.4815		
		St dev	0.0686	0.0291	0.4474		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	2.6501	-0.6738	-0.0098	1.0622	0.5507	0.3334	40.0821	20.7805	12.5798
2	2.6685	-0.6853	-0.0235	1.0479	0.5368	0.3247	39.2708	20.1149	12.1685
3	2.6395	-0.6665	-0.0095	1.0313	0.5433	0.3216	39.0717	20.5823	12.1830
4	2.5518	-0.6539	-0.0184	1.0198	0.5245	0.3253	39.9638	20.5534	12.7462
5	2.5931	-0.6468	-0.0094	1.0511	0.5521	0.3271	40.5337	21.2924	12.6161
6	2.6242	-0.6798	-0.0200	1.0575	0.5286	0.3227	40.2990	20.1422	12.2980
7	2.6009	-0.6710	-0.0220	1.0463	0.5325	0.3260	40.2261	20.4731	12.5335
8	2.4843	-0.6457	-0.0148	0.9919	0.4995	0.2998	39.9266	20.1054	12.0684
9	2.4687	-0.6375	-0.0163	0.9659	0.4980	0.2973	39.1260	20.1728	12.0423
10	2.5511	-0.6585	-0.0227	1.0176	0.5165	0.3087	39.8901	20.2468	12.0987

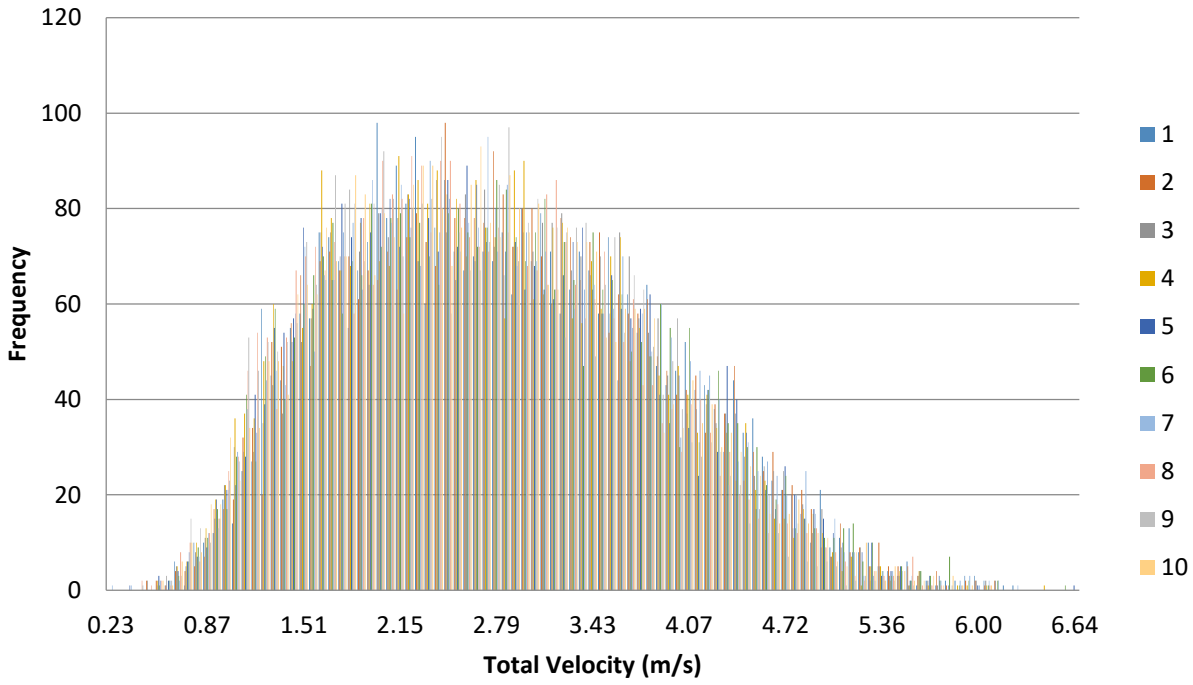


Figure 1. Velocity histogram for each interval (100 bins).

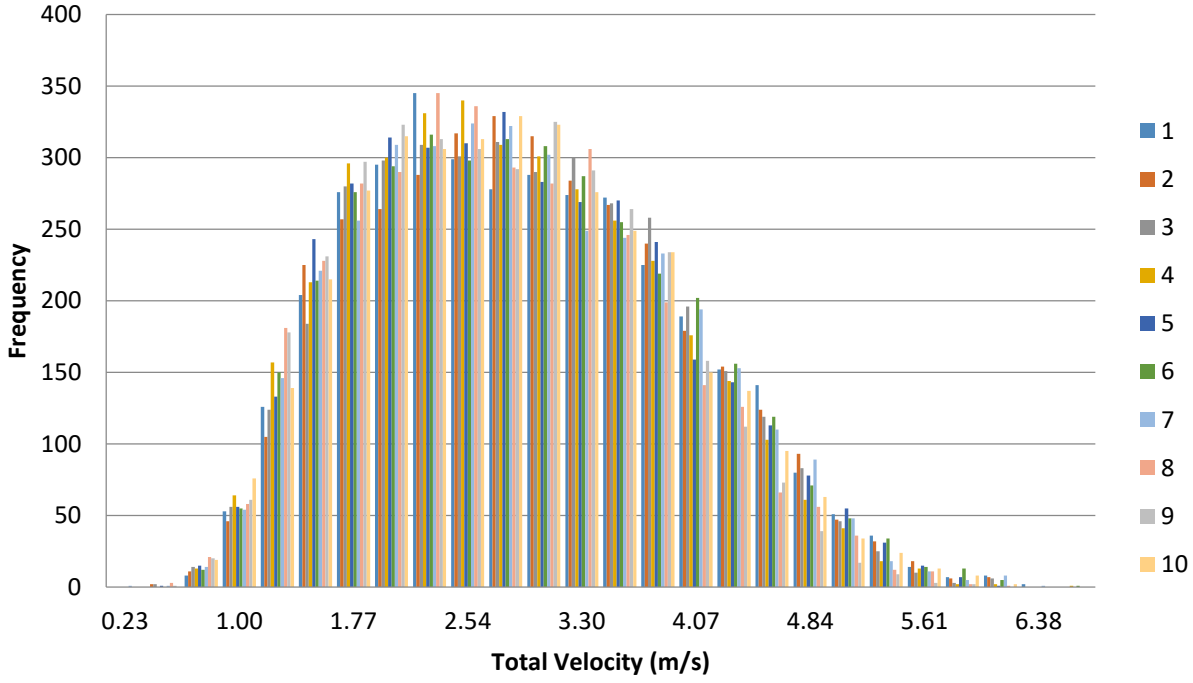
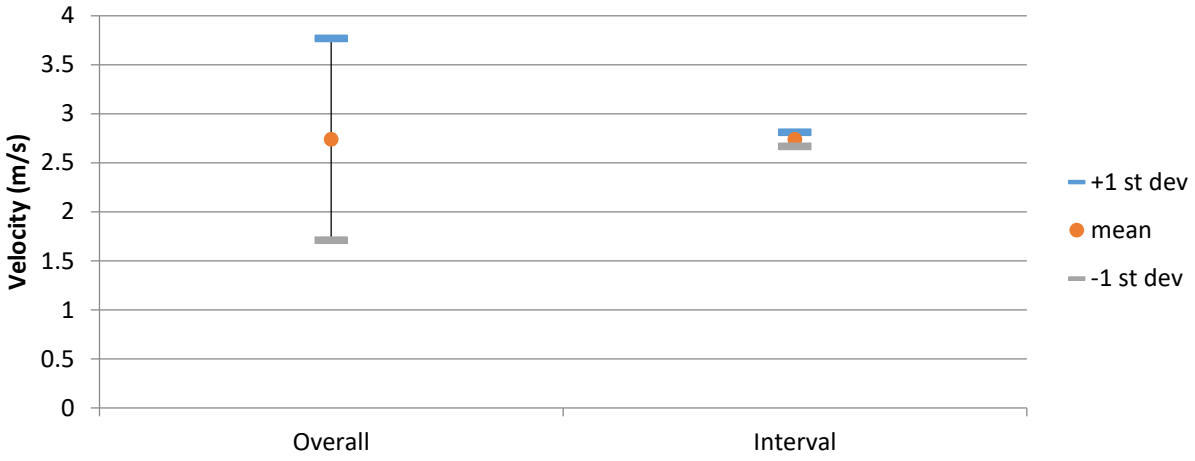
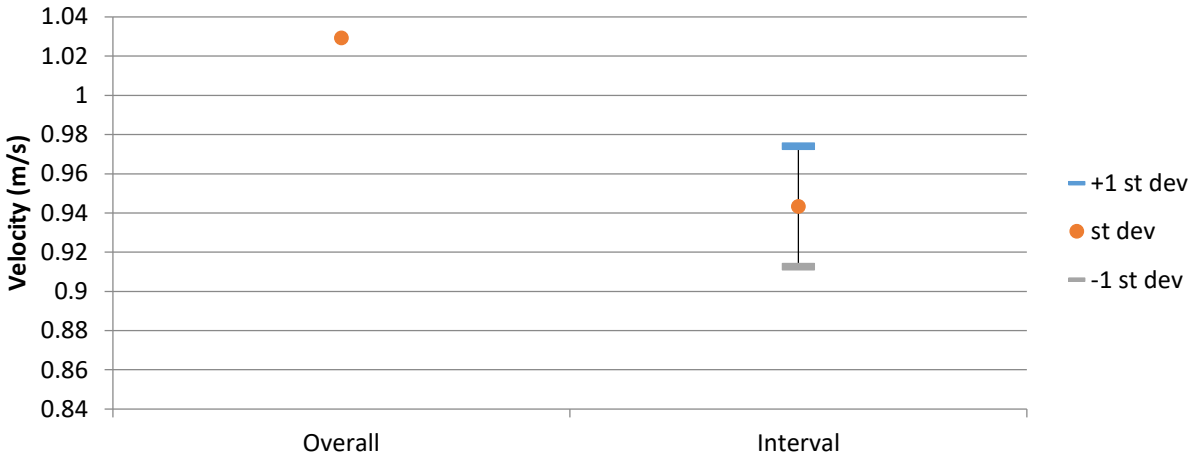


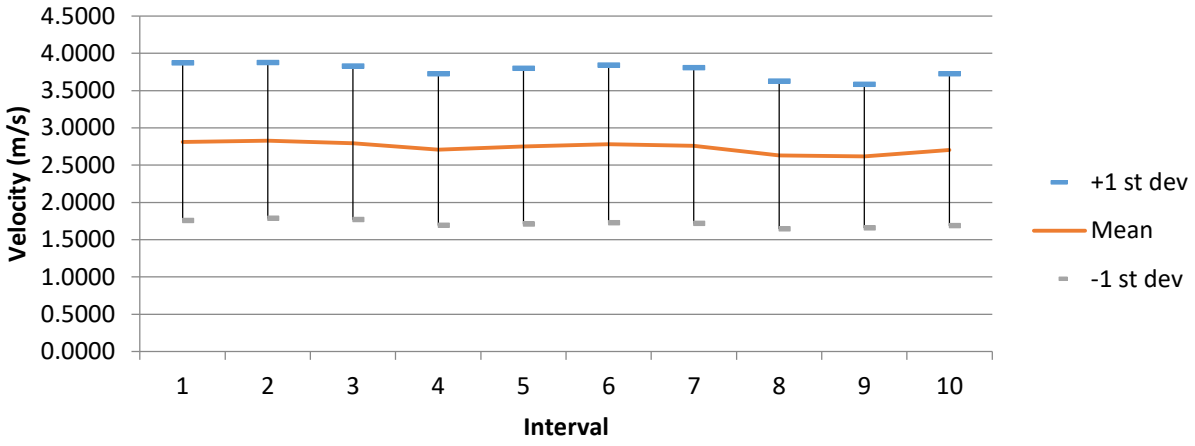
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 46
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: Unknown
First Sample Date: 13-Aug-13
First Sample Time: 09:28:10.546

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	1.5356	0.0000	0.7898	0.1194
u	1.0400	0.0000	0.5484	0.0964
v	1.0900	0.0000	0.5153	0.0965
w	0.5120	-0.5840	0.2038	0.1080

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	1.5356	0.8445	1.0686	0.1270	11.8879	6693	53.54 %
2	1.4908	0.0000	0.8866	0.0996	11.2291	6083	48.66 %
3	1.0517	0.0000	0.8366	0.0863	10.3121	7203	57.62 %
4	1.0622	0.5648	0.8032	0.0610	7.5994	5472	43.78 %
5	0.9073	0.5163	0.7467	0.0592	7.9299	5799	46.39 %
6	0.9150	0.5796	0.7490	0.0498	6.6481	5244	41.95 %
7	0.8983	0.5490	0.7344	0.0490	6.6739	6463	51.70 %
8	0.8208	0.5383	0.6903	0.0477	6.9144	7068	56.54 %
9	0.8730	0.5489	0.6891	0.0457	6.6352	7114	56.91 %
10	0.8311	0.5332	0.6807	0.0442	6.4913	6595	52.76 %
		Average	0.7885	0.0670	8.2321		
		St dev	0.1131	0.0266	1.9854		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	0.7553	0.7365	-0.0365	0.0883	0.0995	0.1616	11.6845	13.1751	21.3976
2	0.6277	0.5875	0.1750	0.0817	0.0855	0.1102	13.0174	13.6287	17.5563
3	0.5795	0.5722	0.1709	0.0645	0.0658	0.0809	11.1350	11.3558	13.9570
4	0.5588	0.5242	0.2234	0.0558	0.0543	0.0774	9.9831	9.7210	13.8565
5	0.5203	0.4823	0.2177	0.0574	0.0520	0.0662	11.0229	9.9968	12.7153
6	0.5201	0.4796	0.2361	0.0545	0.0433	0.0487	10.4741	8.3293	9.3636
7	0.5007	0.4765	0.2386	0.0508	0.0386	0.0555	10.1495	7.7054	11.0761
8	0.4695	0.4529	0.2156	0.0455	0.0422	0.0543	9.6967	8.9905	11.5716
9	0.4638	0.4415	0.2442	0.0466	0.0397	0.0598	10.0420	8.5509	12.9044
10	0.4578	0.4227	0.2610	0.0513	0.0439	0.0665	11.2138	9.5884	14.5369

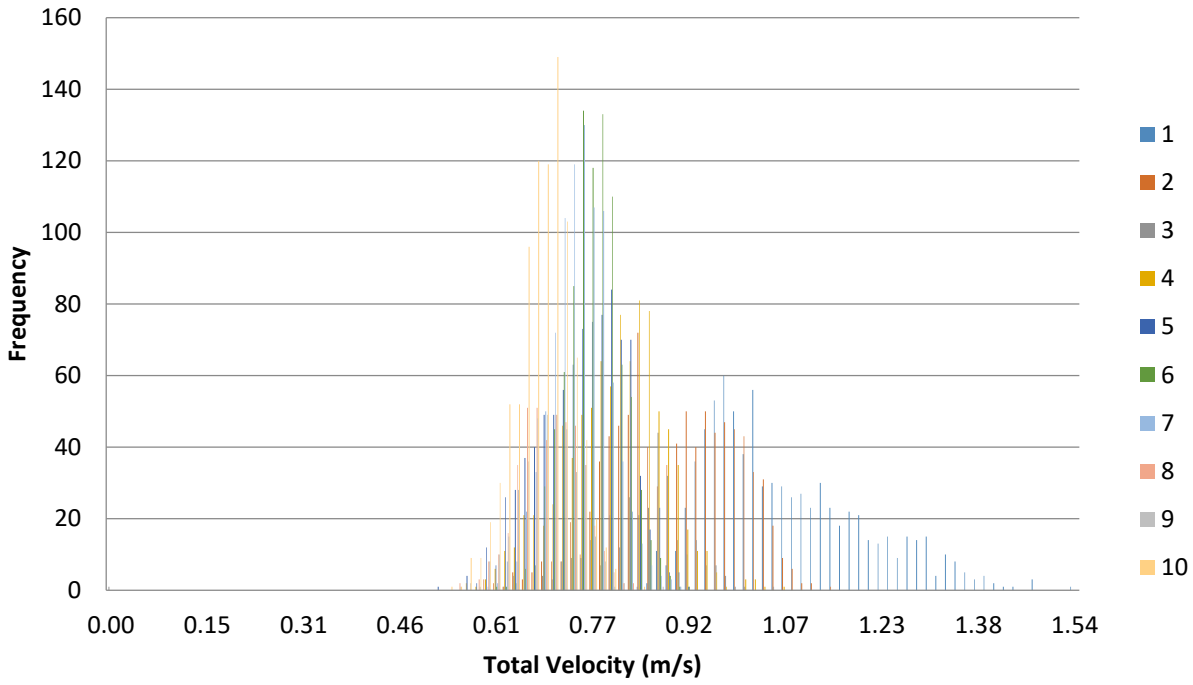


Figure 1. Velocity histogram for each interval (100 bins).

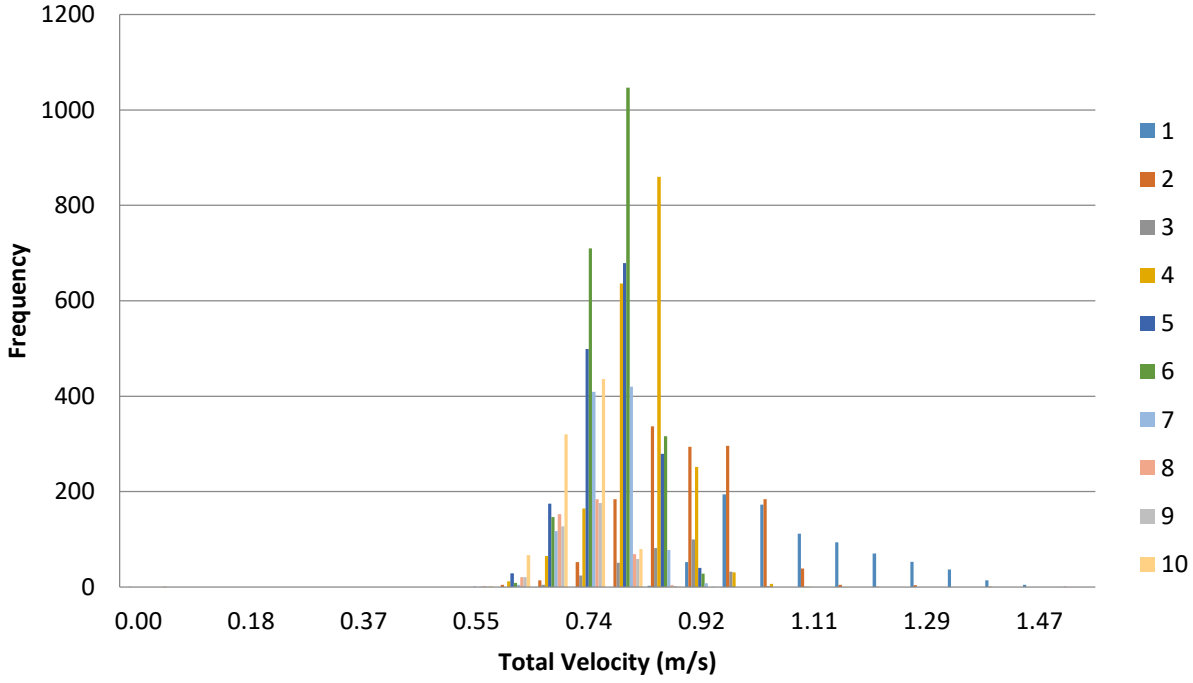
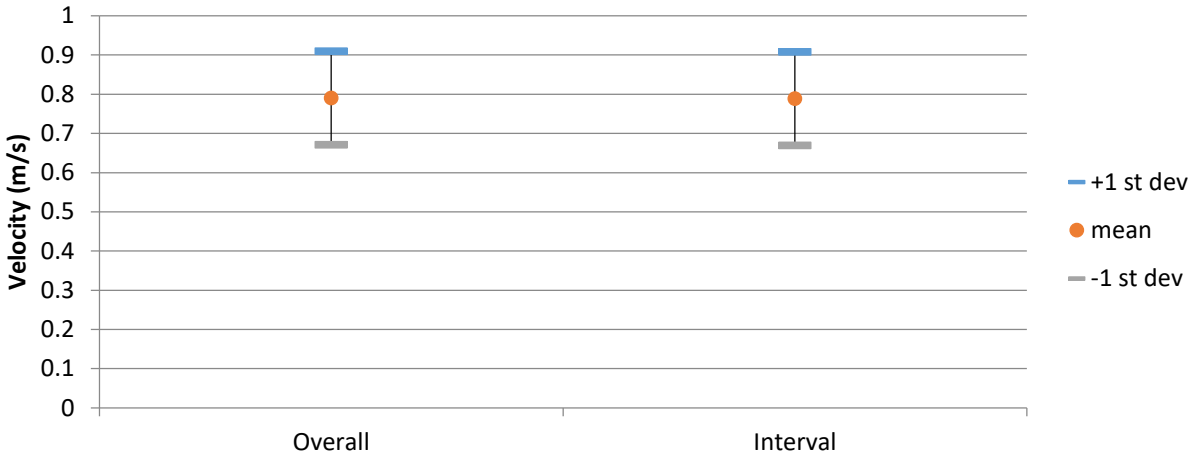
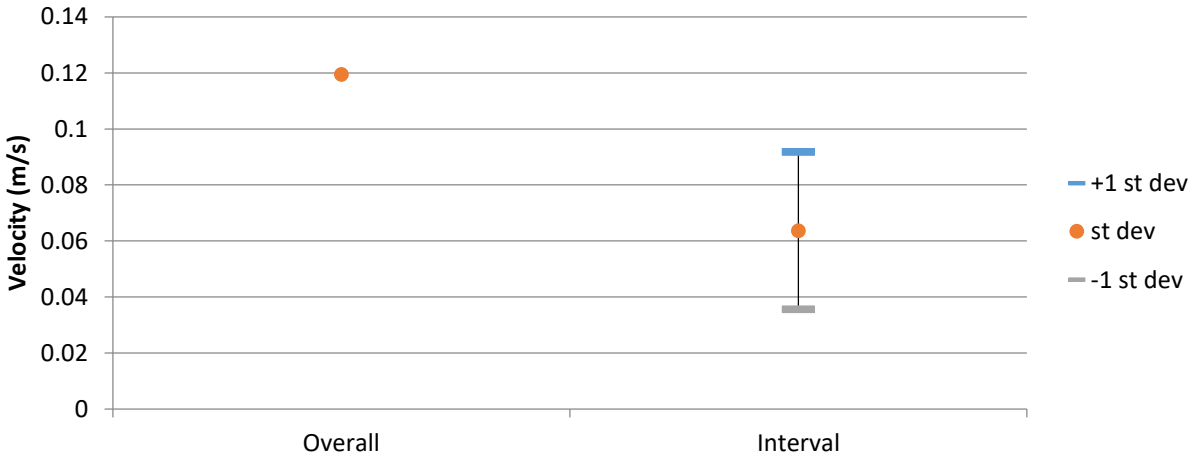


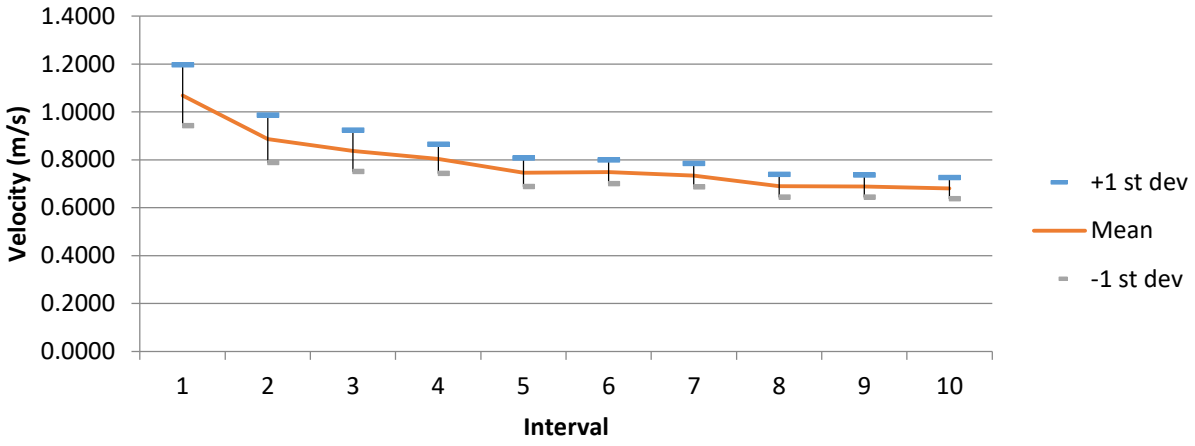
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 47
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: e3
First Sample Date: 13-Aug-13
First Sample Time: 09:40:29.406

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.7041	10.3397	11.0445	0.1557
u	11.2000	9.7500	10.5487	0.1679
v	0.9840	-1.4100	-0.2287	0.3149
w	-2.1000	-4.2400	-3.2402	0.2275

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.5806	10.3397	10.9965	0.1505	1.4105
2	11.6173	10.4669	11.0286	0.1556	1.3109
3	11.7041	10.6269	11.1201	0.1458	1.3538
4	11.6055	10.4663	11.0689	0.1498	1.3575
5	11.5970	10.5210	11.0409	0.1499	1.3511
6	11.4697	10.4281	10.9975	0.1486	1.3154
7	11.4710	10.4548	11.0062	0.1448	1.4339
8	11.6683	10.4987	11.0674	0.1587	1.4568
9	11.6017	10.4337	11.0294	0.1607	1.2819
10	11.5861	10.5520	11.0892	0.1421	1.3640
		Average	11.0445	0.1506	1.3636
		St Dev	0.0413	0.0060	0.0528

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.5249	-0.5239	-3.1180	0.1634	0.2900	0.2563	1.5523	2.7550	2.4353
2	10.5019	-0.5435	-3.3093	0.1553	0.2403	0.1859	1.4788	2.2882	1.7705
3	10.5791	-0.1651	-3.4117	0.1580	0.1724	0.1973	1.4939	1.6298	1.8652
4	10.4890	-0.3937	-3.5082	0.1567	0.1391	0.1350	1.4942	1.3264	1.2869
5	10.5694	-0.1631	-3.1775	0.1620	0.1918	0.1599	1.5332	1.8148	1.5131
6	10.5125	-0.3776	-3.2010	0.1545	0.1472	0.1354	1.4693	1.4000	1.2880
7	10.5298	-0.3515	-3.1770	0.1519	0.1633	0.1222	1.4421	1.5513	1.1602
8	10.5907	0.2199	-3.1853	0.1860	0.2178	0.2703	1.7563	2.0561	2.5520
9	10.5491	0.0866	-3.1998	0.1785	0.2327	0.2407	1.6920	2.2056	2.2821
10	10.6402	-0.0751	-3.1146	0.1494	0.1749	0.1398	1.4040	1.6436	1.3140

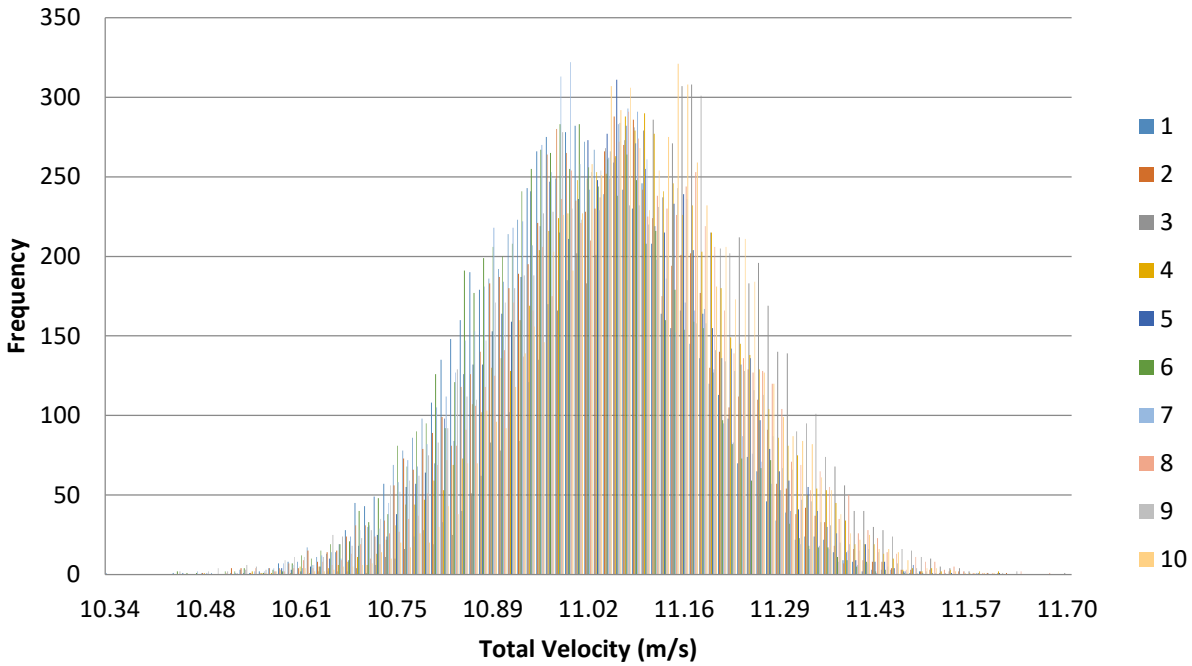


Figure 1. Velocity histogram for each interval (100 bins).

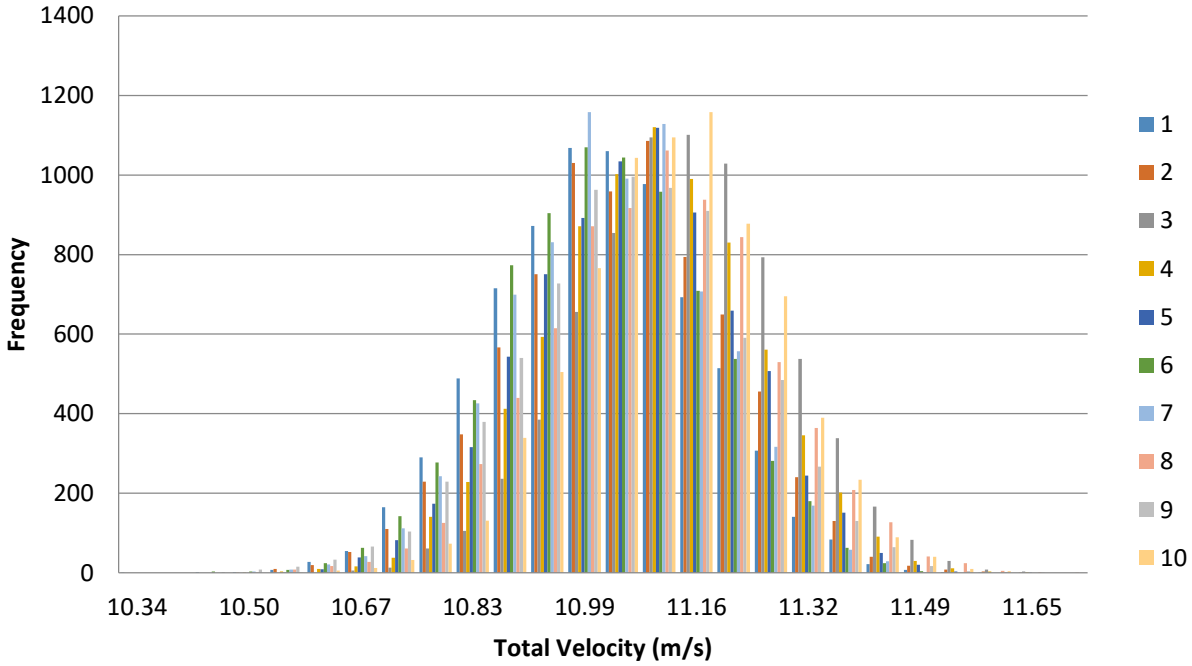
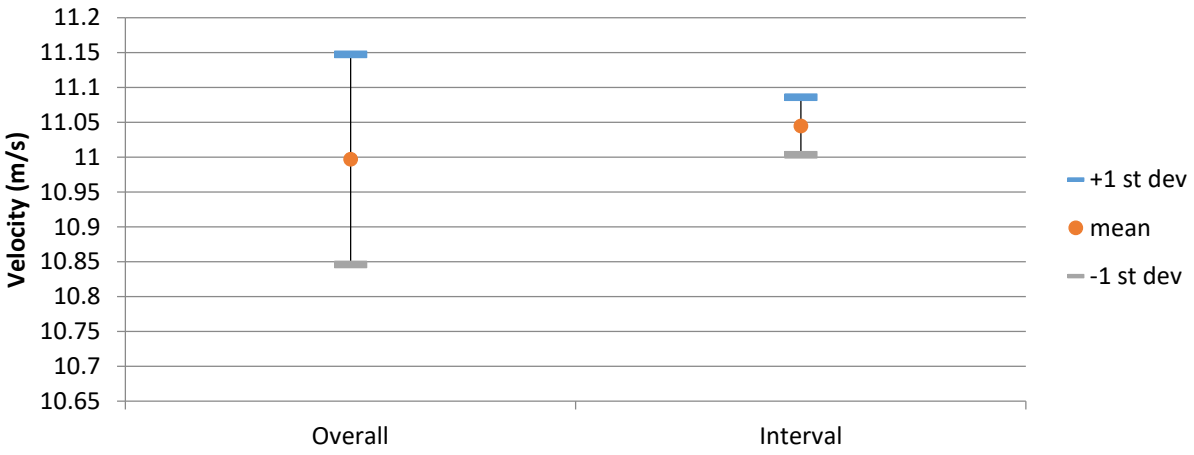
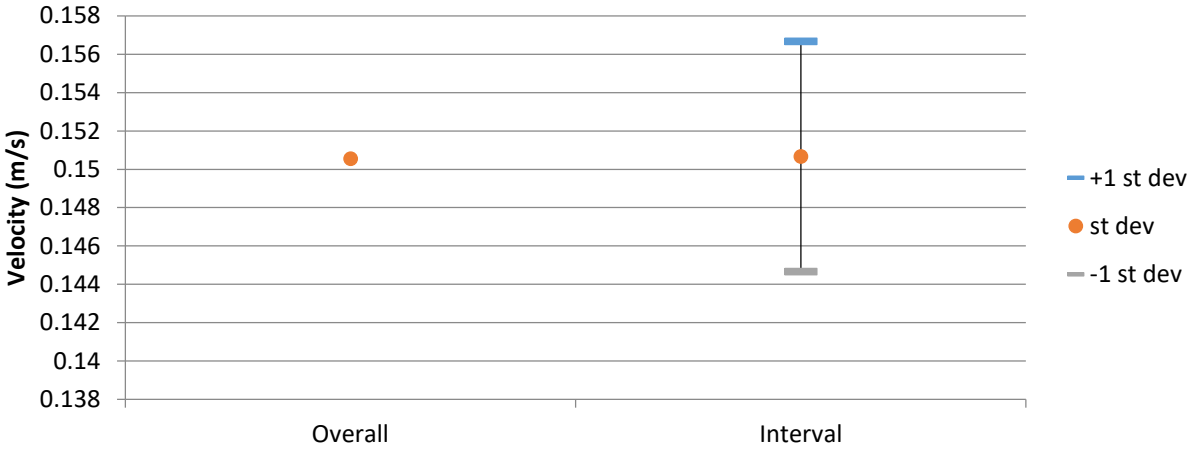


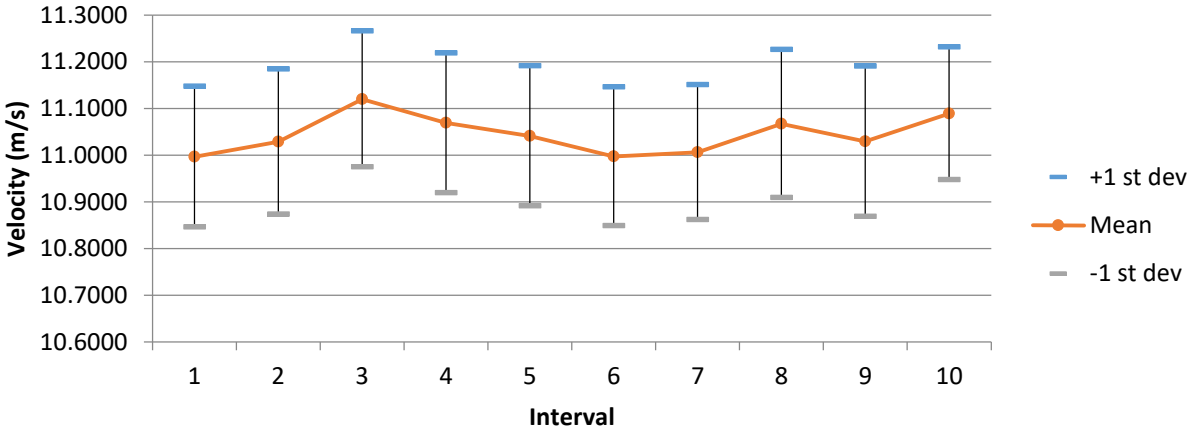
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 48
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E5
First Sample Date: 13-Aug-13
First Sample Time: 09:42:33.062

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.3636	9.0313	10.1068	0.2261
u	11.2000	8.8900	9.9368	0.2195
v	0.7380	-4.6700	-1.4976	0.4817
w	1.5500	-3.1800	-0.7291	0.6365

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.2227	9.1238	10.1415	0.2419	2.4056
2	11.0664	9.2523	10.1128	0.2433	2.0483
3	10.8183	9.3121	10.1227	0.2073	2.0584
4	10.9499	9.3562	10.1019	0.2079	2.3141
5	11.1119	9.0313	10.0307	0.2321	2.1157
6	10.8559	9.2090	10.0555	0.2127	2.0434
7	10.8655	9.3596	10.0648	0.2057	2.1158
8	10.9517	9.4607	10.1541	0.2148	2.0171
9	10.9996	9.3809	10.1281	0.2043	2.4326
10	11.3636	9.3986	10.1558	0.2471	2.1937
		Average	10.1068	0.2217	2.1745
		St Dev	0.0432	0.0173	0.1477

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.0190	-1.2047	-0.2398	0.2250	0.5270	0.8316	2.2455	5.2600	8.3004
2	9.9654	-1.4428	-0.3089	0.2228	0.4798	0.7496	2.2361	4.8148	7.5217
3	9.9343	-1.3069	-1.3834	0.2066	0.2571	0.3010	2.0798	2.5883	3.0300
4	9.9774	-1.4413	-0.5412	0.2014	0.2221	0.2911	2.0183	2.2260	2.9176
5	9.9414	-1.2336	-0.3048	0.2230	0.2958	0.2902	2.2431	2.9750	2.9186
6	9.9203	-1.5047	-0.4111	0.2098	0.3407	0.3904	2.1149	3.4343	3.9355
7	9.9055	-1.4907	-0.9039	0.2005	0.2301	0.3021	2.0237	2.3229	3.0499
8	9.9214	-1.9018	-0.9157	0.2125	0.2608	0.3853	2.1417	2.6290	3.8832
9	9.9158	-1.4110	-1.4444	0.2047	0.3130	0.2848	2.0648	3.1561	2.8724
10	9.8669	-2.0380	-0.8375	0.2471	0.7831	0.5624	2.5041	7.9369	5.7002

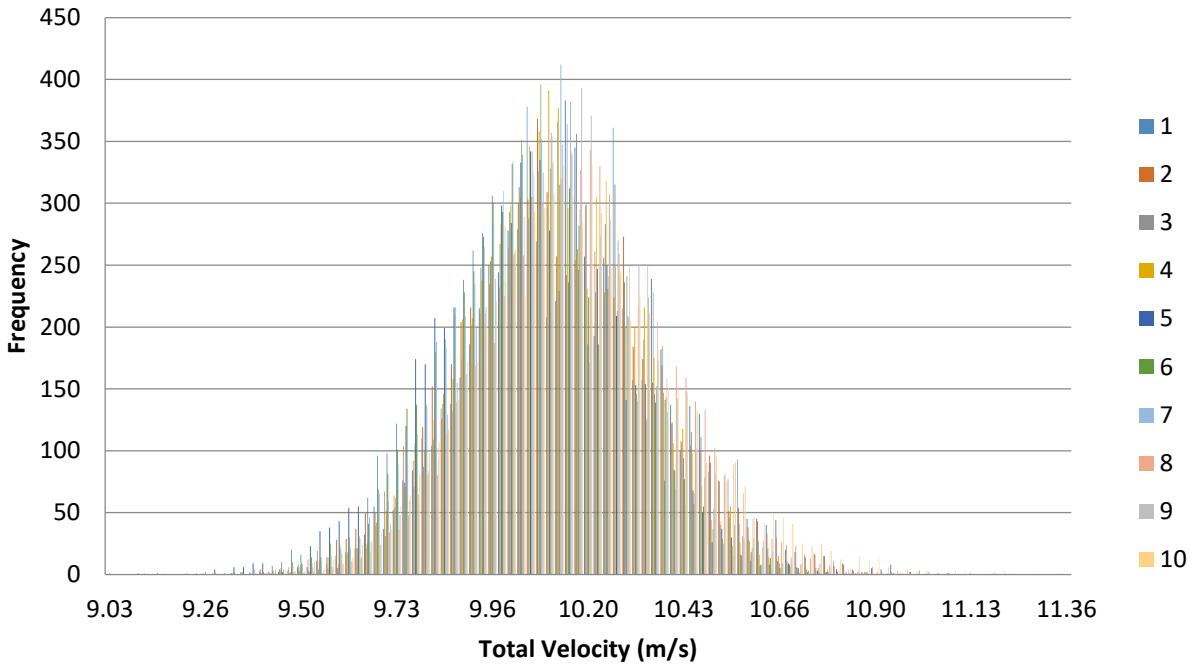


Figure 1. Velocity histogram for each interval (100 bins).

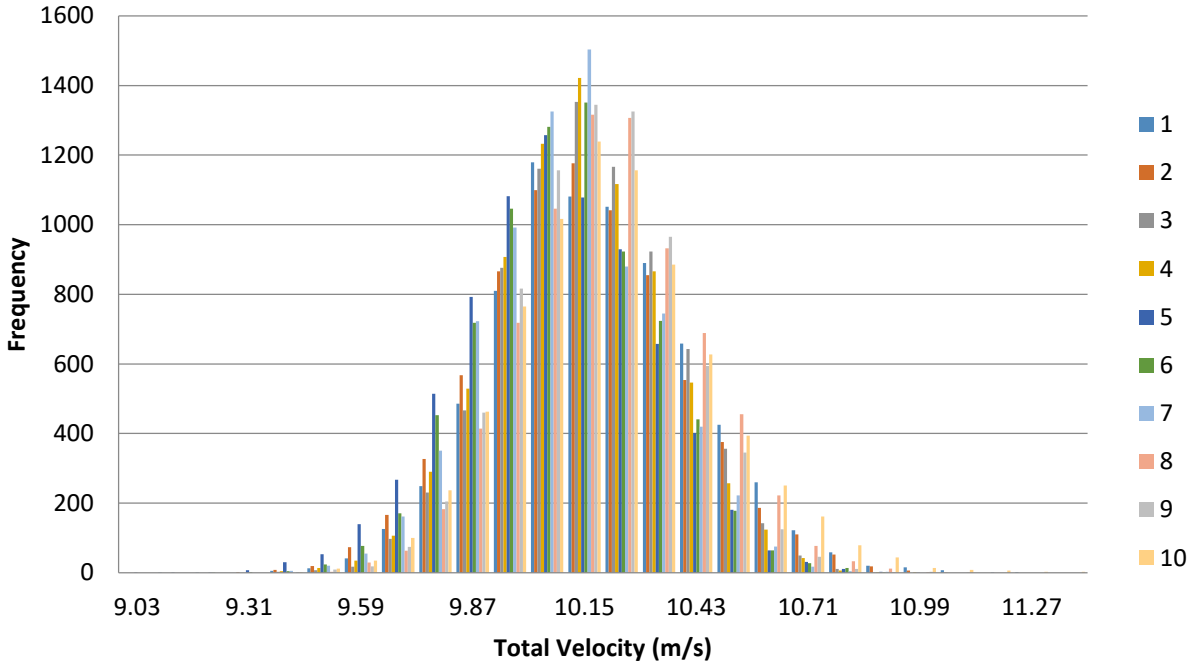
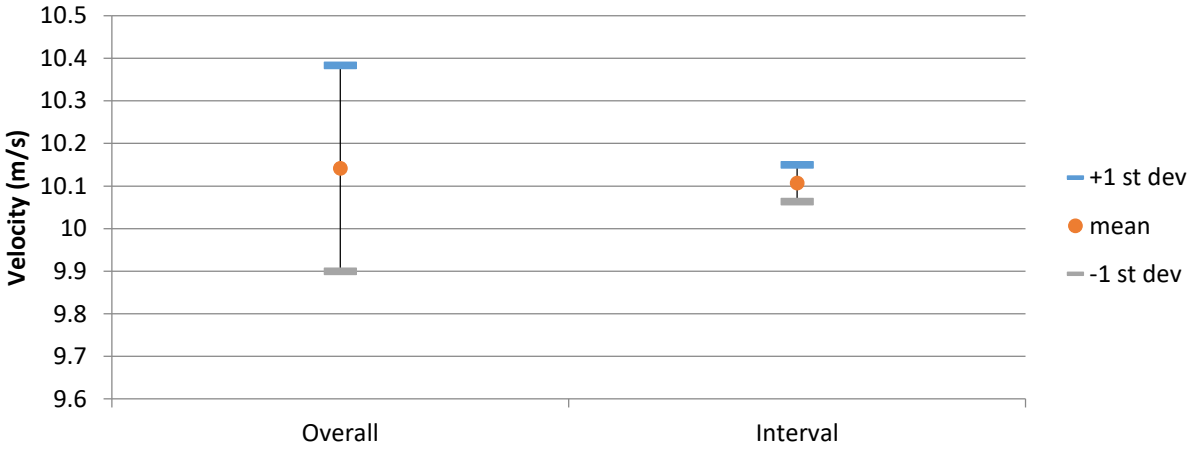
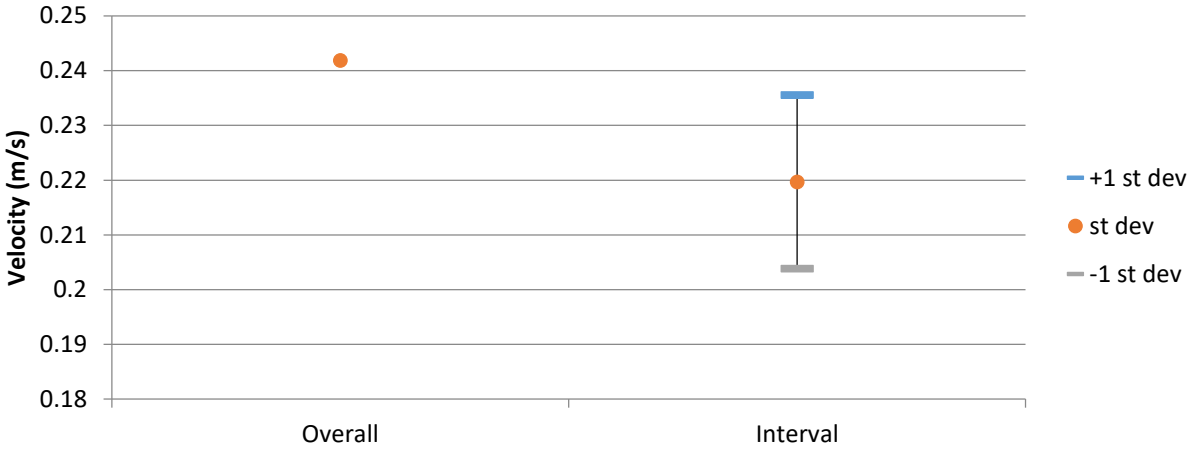


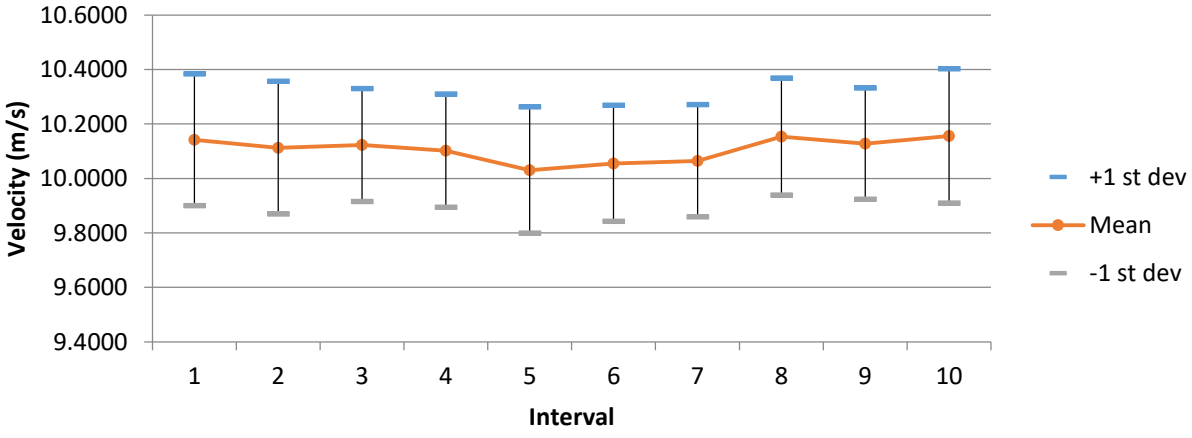
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 49
Blockage Condition: all Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E4
First Sample Date: 13-Aug-13
First Sample Time: 09:44:03.093

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.4170	9.0478	10.3584	0.3059
u	11.4000	8.8600	10.2298	0.3228
v	2.8500	-2.0200	0.3207	0.7037
w	0.9060	-3.7700	-1.2981	0.5960

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.3142	9.3361	10.3705	0.3022	2.8761
2	11.4024	9.1387	10.4185	0.2996	2.7296
3	11.3309	9.4027	10.4318	0.2847	2.8579
4	11.3276	9.2998	10.3986	0.2972	2.9178
5	11.4170	9.3873	10.3744	0.3027	3.0401
6	11.2823	9.1957	10.3395	0.3143	2.9105
7	11.2749	9.2265	10.2996	0.2998	2.9477
8	11.2216	9.0478	10.2676	0.3027	2.9399
9	11.2615	9.1728	10.3124	0.3032	2.9897
10	11.4104	9.1200	10.3716	0.3101	2.9121
		Average	10.3584	0.3016	2.9121
		St Dev	0.0531	0.0078	0.0788

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.2471	0.2259	-1.4610	0.3194	0.5124	0.2927	3.1168	5.0007	2.8561
2	10.2370	1.1957	-1.2743	0.3378	0.5663	0.5921	3.3002	5.5322	5.7842
3	10.1985	0.5443	-1.9384	0.3129	0.6404	0.5762	3.0677	6.2794	5.6494
4	10.3115	0.2570	-0.9656	0.3095	0.5863	0.6736	3.0019	5.6855	6.5321
5	10.1953	0.8577	-1.6523	0.3354	0.3718	0.2407	3.2895	3.6470	2.3609
6	10.2287	0.5582	-1.3102	0.3359	0.4154	0.2523	3.2838	4.0610	2.4663
7	10.2186	0.0256	-1.2066	0.3092	0.3526	0.2750	3.0255	3.4504	2.6910
8	10.1889	-0.3999	-0.9960	0.3083	0.5691	0.3629	3.0255	5.5857	3.5615
9	10.2226	-0.2216	-0.8554	0.3075	0.6647	0.7861	3.0084	6.5018	7.6902
10	10.2495	0.1647	-1.3210	0.3323	0.5622	0.6438	3.2416	5.4856	6.2816

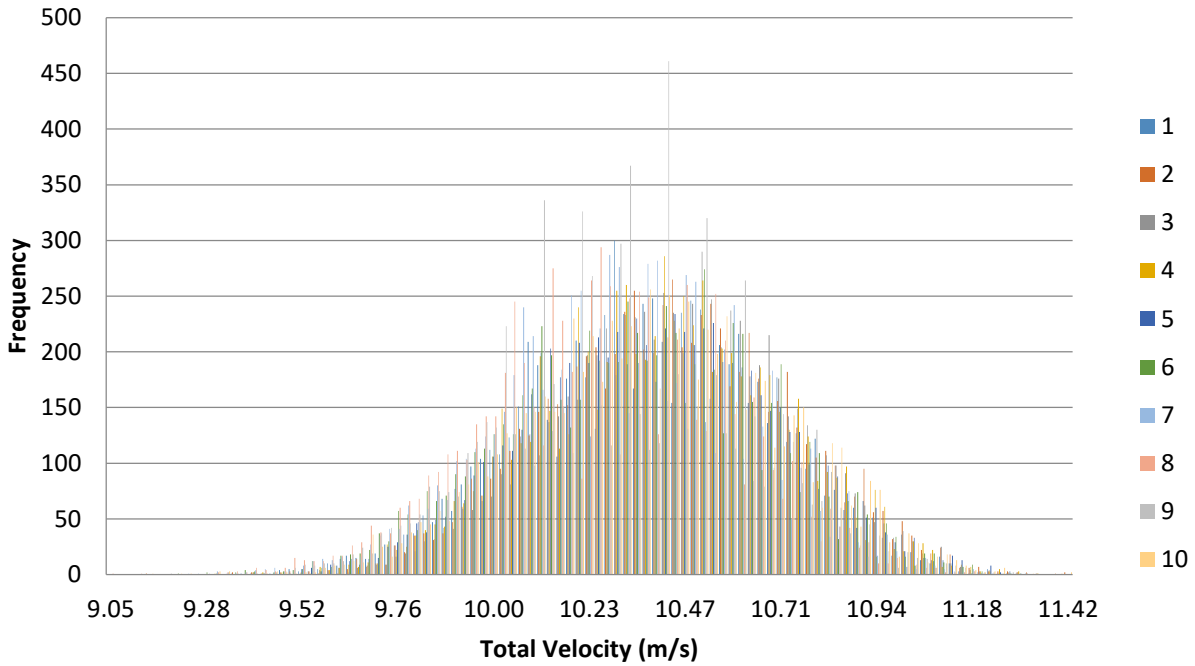


Figure 1. Velocity histogram for each interval (100 bins).

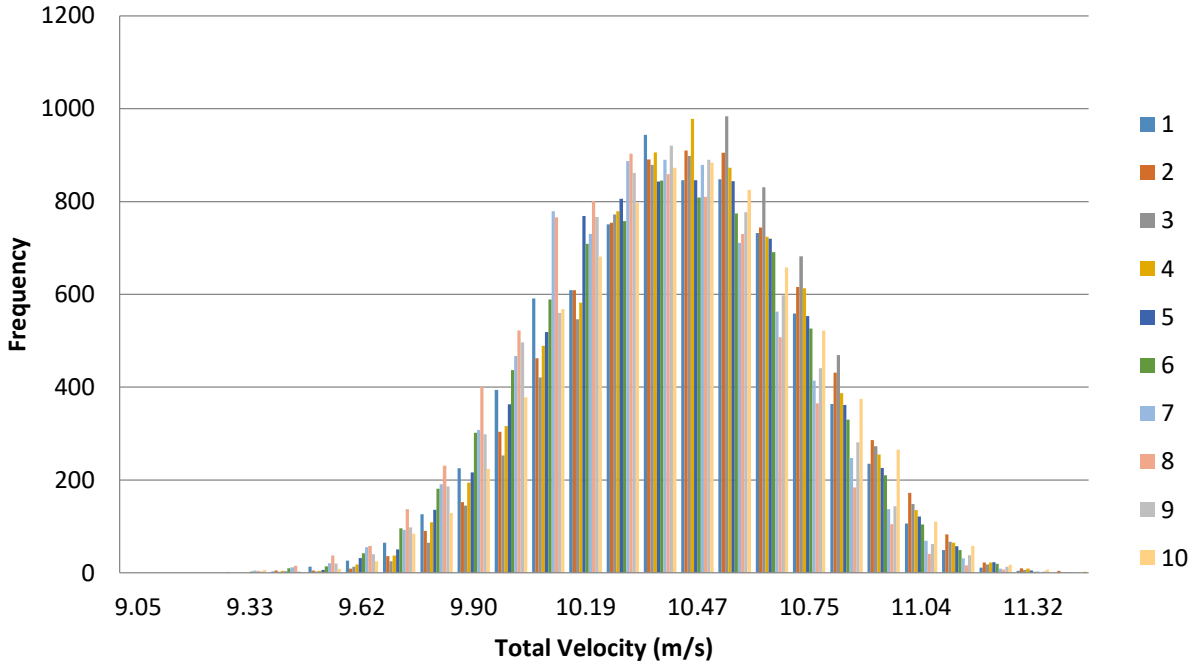
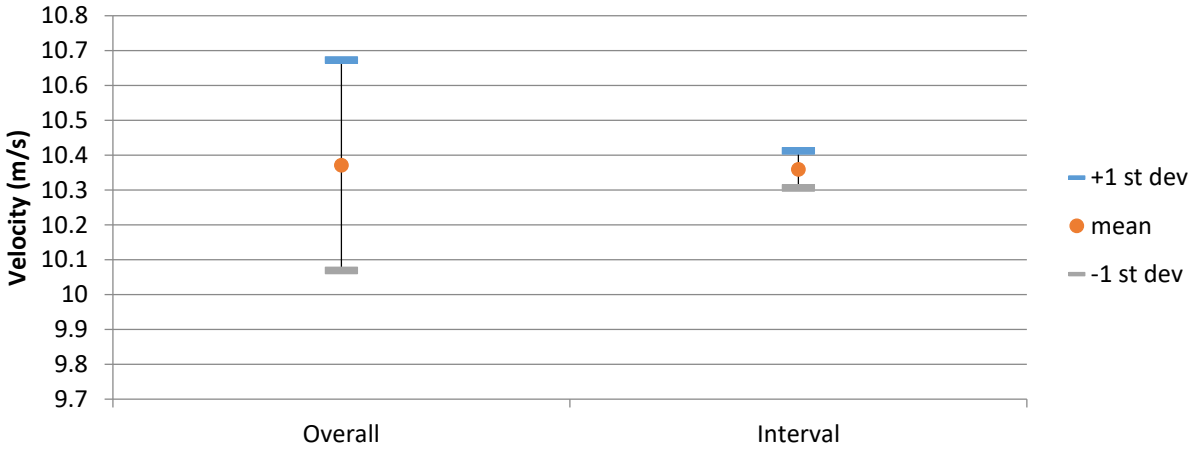
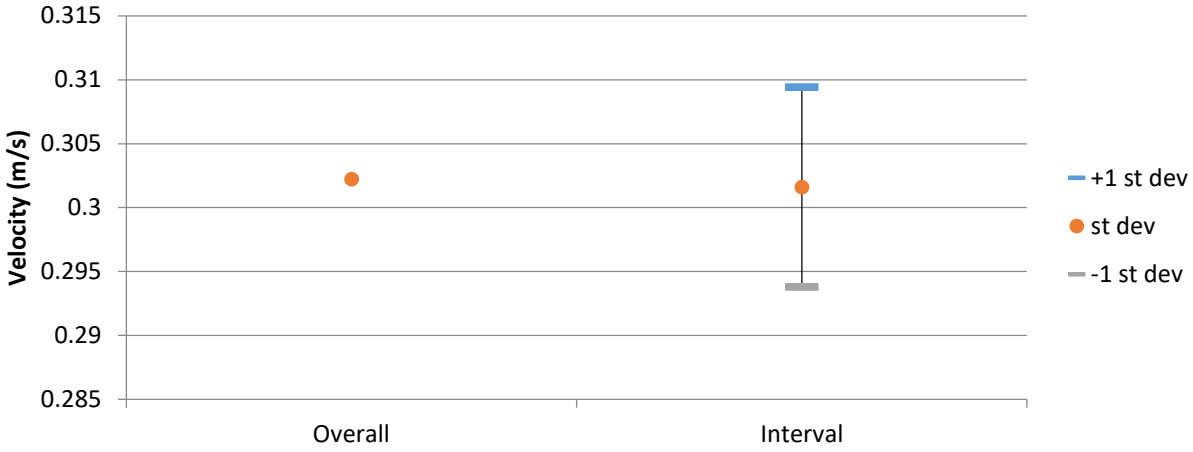


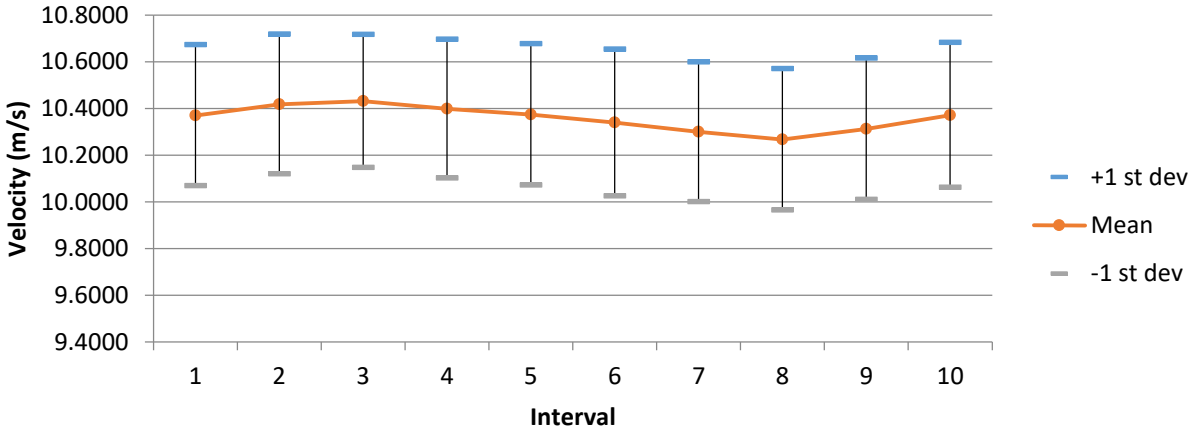
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 50
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E1
First Sample Date: 13-Aug-13
First Sample Time: 09:47:35.968

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	18.2351	10.9477	13.3720	0.3214
u	14.2000	8.5500	11.0354	0.5082
v	9.5600	-6.8100	0.0962	1.5845
w	-4.8900	-12.6000	-7.3477	0.6060

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	13.9646	12.7923	13.3394	0.1667	1.2493	0	0.00 %
2	13.9340	12.8142	13.3090	0.1609	1.2092	0	0.00 %
3	14.0563	12.8284	13.3957	0.1631	1.2174	1	0.01 %
4	15.1339	12.7487	13.6611	0.2929	2.1440	0	0.00 %
5	14.9955	11.6866	13.3358	0.3011	2.2575	0	0.00 %
6	14.6511	12.3024	13.1520	0.1907	1.4496	0	0.00 %
7	18.2351	12.2104	13.3255	0.2750	2.0638	0	0.00 %
8	17.6808	11.8139	13.5830	0.4882	3.5941	10	0.08 %
9	17.5082	10.9477	13.3225	0.4109	3.0844	111	0.89 %
10	14.5045	12.3131	13.2956	0.2540	1.9103	0	0.00 %
		Average	13.3720	0.2703	2.0180		
		St dev	0.1392	0.1047	0.7692		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	11.0651	-1.1378	-7.3193	0.2705	0.7237	0.2617	2.4447	6.5407	2.3654
2	10.8382	-0.8517	-7.6478	0.4083	0.3250	0.4503	3.7670	2.9984	4.1545
3	11.0071	-0.9243	-7.5321	0.4247	0.4805	0.5615	3.8587	4.3651	5.1008
4	11.2237	-2.2747	-7.3759	0.3868	0.8961	0.4593	3.4461	7.9837	4.0922
5	11.0301	0.5580	-7.4016	0.4908	0.8455	0.4695	4.4498	7.6652	4.2570
6	10.9372	1.5901	-7.0937	0.3804	0.4830	0.4032	3.4784	4.4164	3.6869
7	10.8970	2.1983	-7.2512	0.4790	0.8661	0.7134	4.3956	7.9479	6.5470
8	11.1918	1.5419	-7.3564	0.7243	1.3602	0.7815	6.4714	12.1533	6.9832
9	10.8146	0.5015	-7.6167	0.6271	1.1763	0.8123	5.7986	10.8769	7.5112
10	11.3461	-0.2314	-6.8863	0.4571	0.4352	0.4802	4.0291	3.8361	4.2322

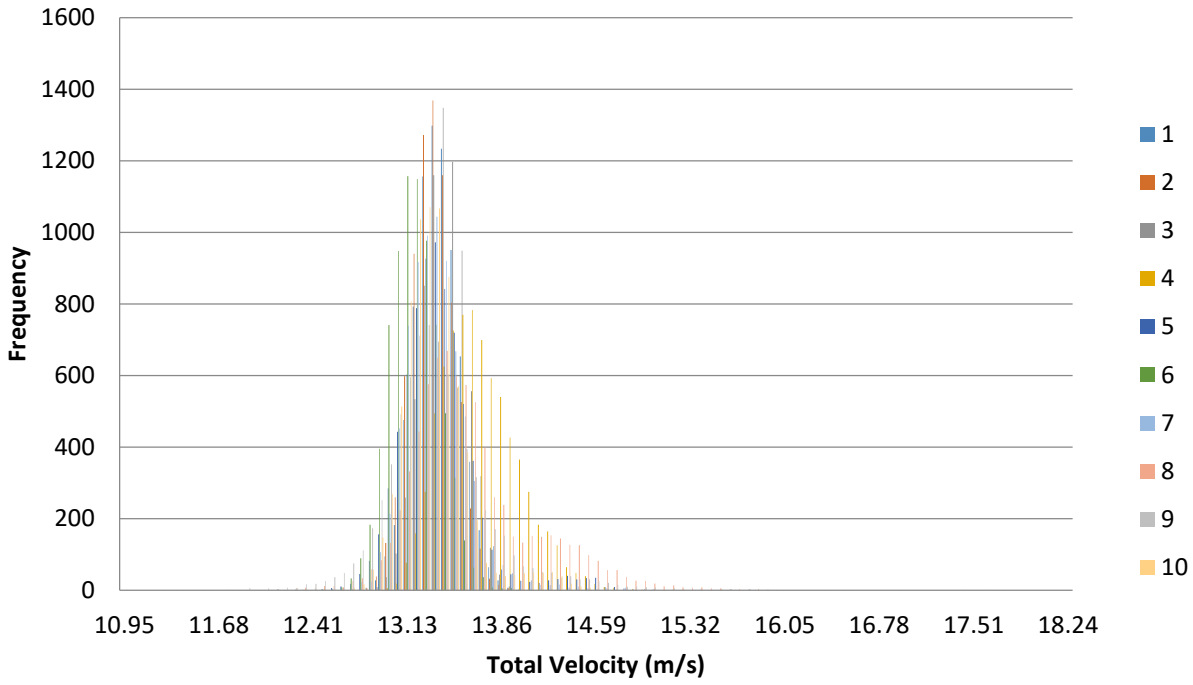


Figure 1. Velocity histogram for each interval (100 bins).

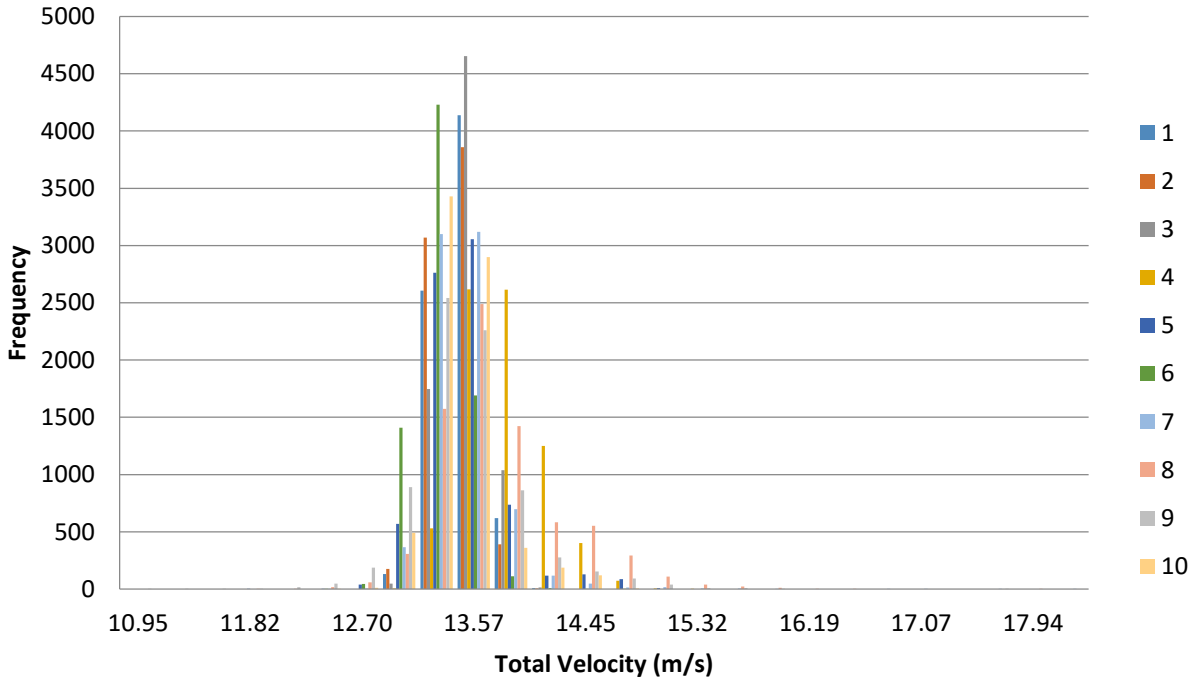
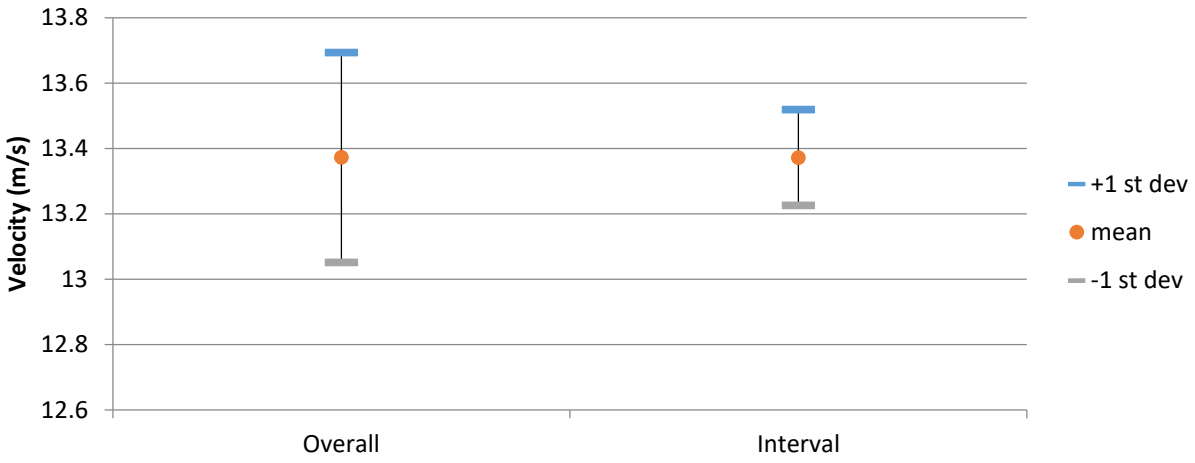
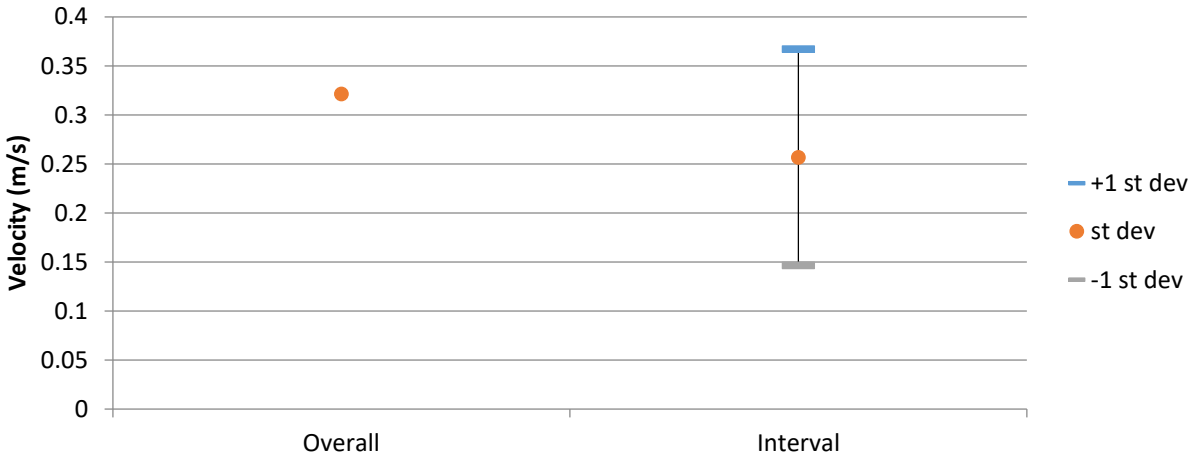


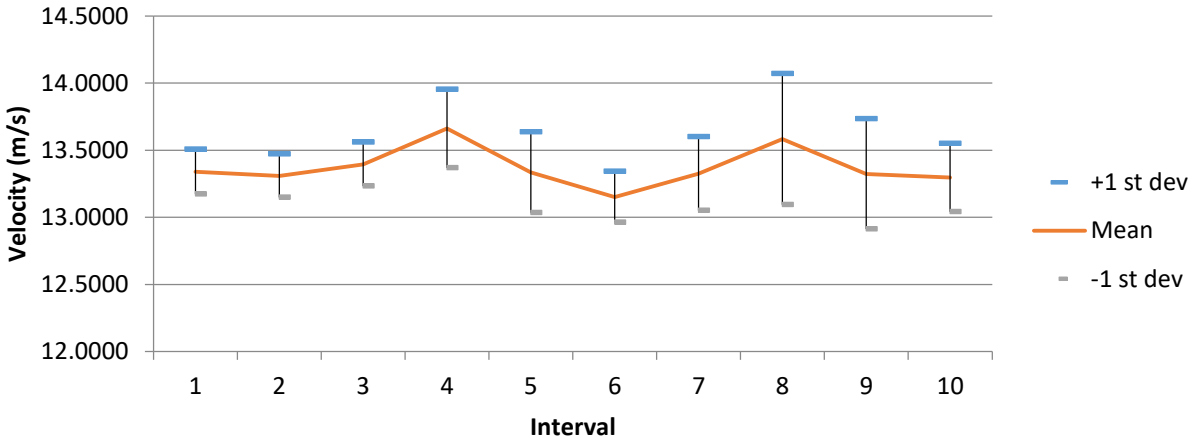
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 51
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E2
First Sample Date: 13-Aug-13
First Sample Time: 09:49:16.718

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	13.2371	11.0979	12.0362	0.3831
u	12.6000	8.8400	10.8612	0.5161
v	3.8600	-2.7900	-0.1404	0.7982
w	-3.3500	-7.0400	-5.0958	0.4012

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	13.1825	11.3648	12.3808	0.2900	2.7853
2	13.2371	11.2783	12.3573	0.3442	3.2215
3	13.0620	11.1537	12.1609	0.3918	2.9955
4	13.1954	11.1482	12.1800	0.3648	2.4651
5	13.0644	11.1428	11.8876	0.2930	2.4879
6	12.9550	11.1071	11.8070	0.2937	3.1549
7	13.0145	11.1419	12.0451	0.3800	2.8400
8	13.0946	11.1189	11.9494	0.3394	1.6666
9	12.4818	11.1720	11.8142	0.1969	1.9547
10	12.8296	11.0979	11.7796	0.2303	2.5956
		Average	12.0362	0.3124	2.6167
		St Dev	0.2249	0.0638	0.4752

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	11.3958	-0.9851	-4.6880	0.3249	0.5452	0.3934	2.8510	4.7843	3.4522
2	11.2637	-0.1875	-5.0140	0.4855	0.5539	0.4812	4.3107	4.9180	4.2722
3	10.9344	0.0788	-5.2740	0.5476	0.5058	0.3190	5.0079	4.6255	2.9175
4	11.0900	0.0564	-5.0033	0.4091	0.4508	0.2986	3.6886	4.0646	2.6929
5	10.5931	-0.1988	-5.3418	0.4224	0.5298	0.3934	3.9871	5.0014	3.7139
6	10.5489	-1.0381	-5.1726	0.3872	0.4076	0.2482	3.6705	3.8640	2.3529
7	10.9220	-0.7514	-5.0045	0.4223	0.2859	0.2630	3.8669	2.6177	2.4083
8	10.7291	-0.1892	-5.2044	0.4611	0.5291	0.4193	4.2975	4.9317	3.9082
9	10.5657	0.8084	-5.1955	0.3175	0.3793	0.3013	3.0050	3.5895	2.8513
10	10.5693	1.0028	-5.0599	0.4074	0.4006	0.4111	3.8548	3.7898	3.8893

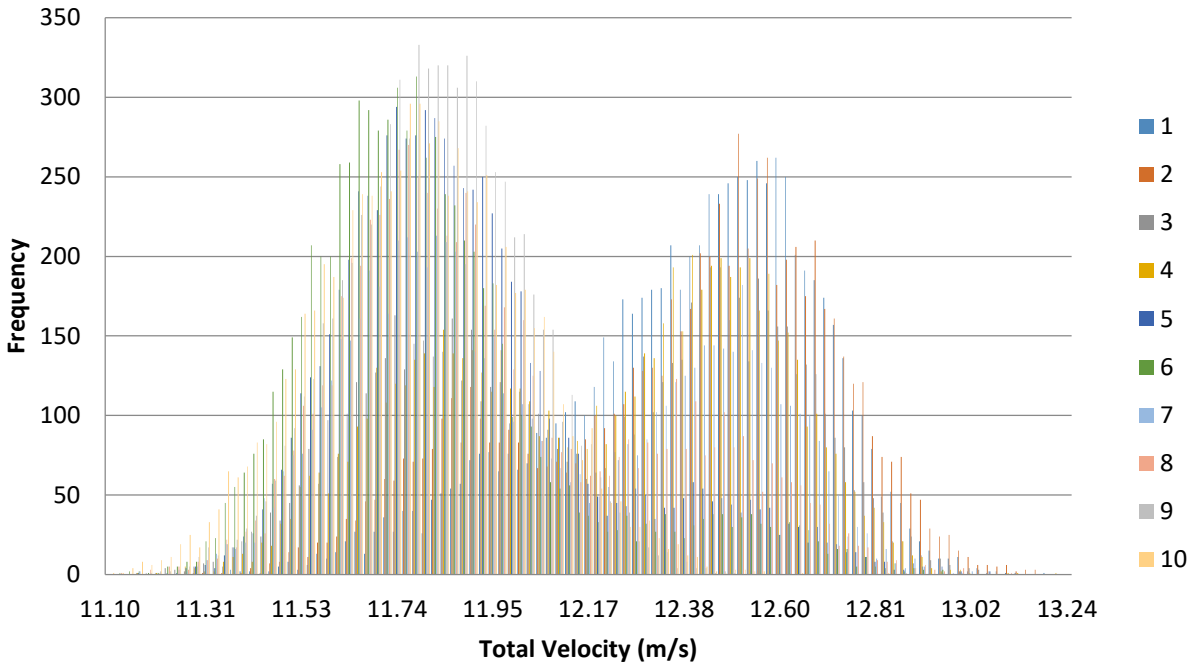


Figure 1. Velocity histogram for each interval (100 bins).

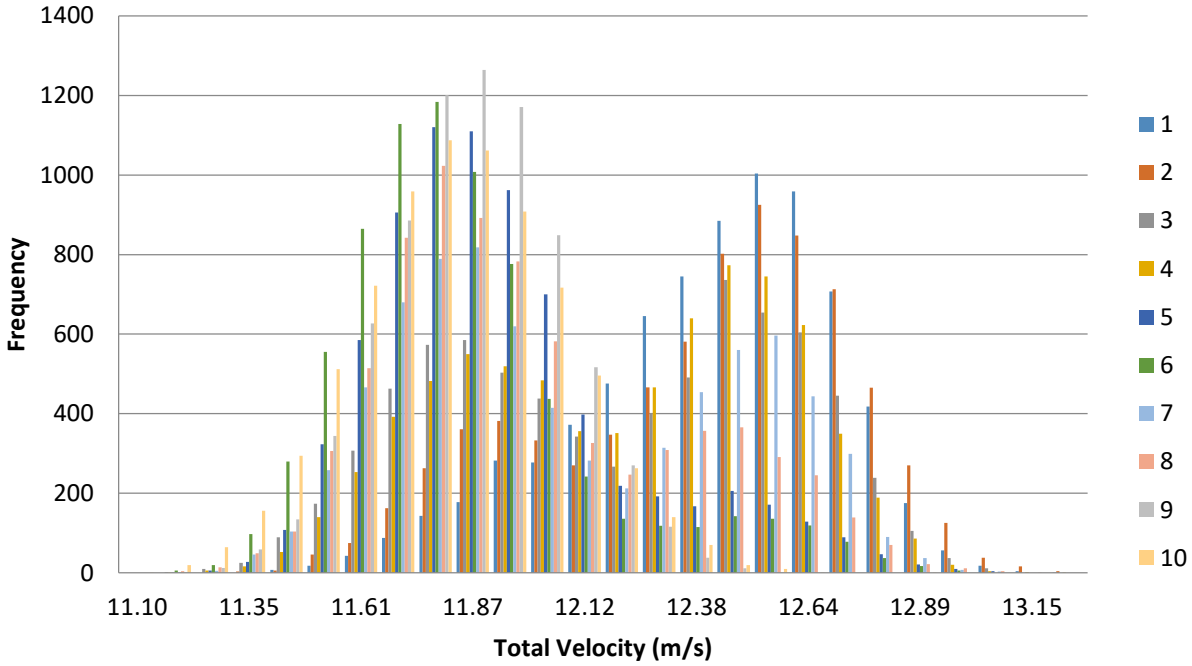
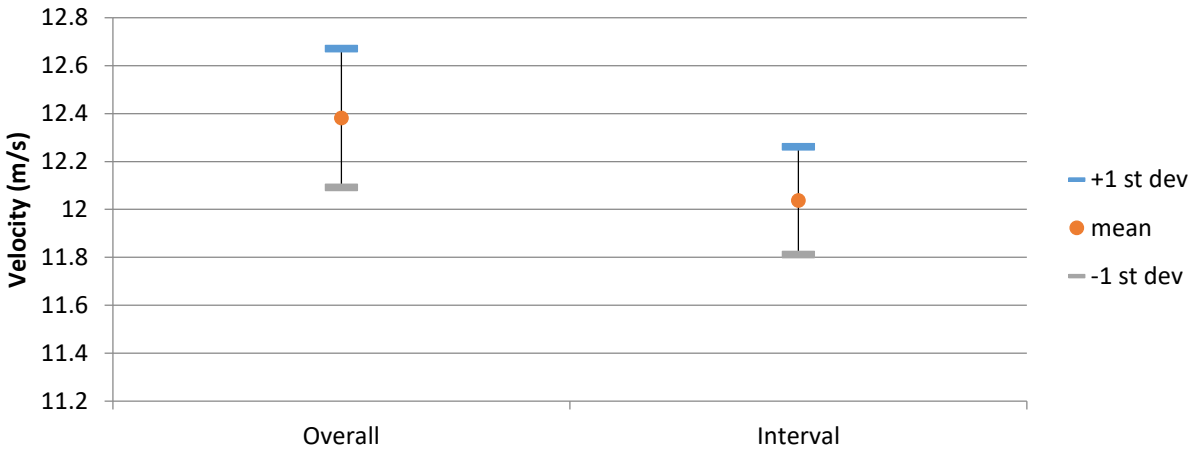
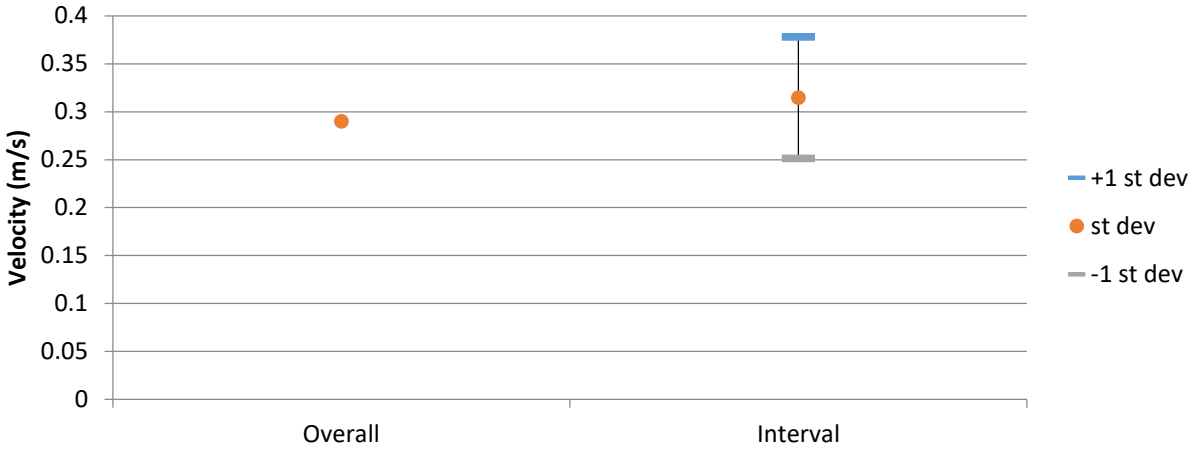


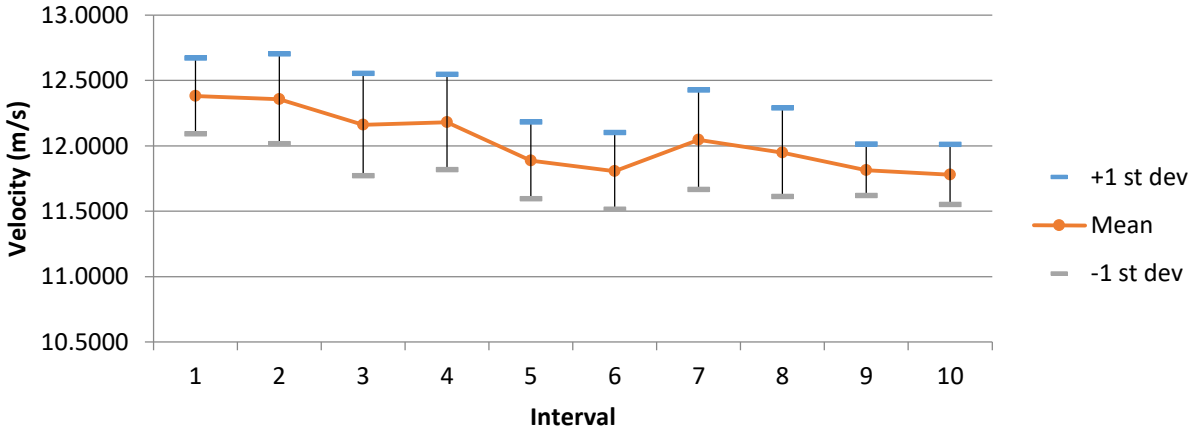
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 52
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: C2
First Sample Date: 13-Aug-13
First Sample Time: 09:51:47.640

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.3746	9.1848	10.6402	0.3880
u	11.3000	6.1600	8.8598	0.7476
v	-0.8740	-6.4200	-3.8919	0.8413
w	-1.4800	-7.8300	-4.2135	0.8370

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	11.7345	9.8766	10.6715	0.2471	2.3153	0	0.00 %
2	11.9913	9.1848	10.6595	0.4640	4.3526	0	0.00 %
3	11.2538	9.4170	10.2486	0.2473	2.4131	6	0.05 %
4	11.4638	9.5561	10.3565	0.2507	2.4205	1	0.01 %
5	12.1908	9.8369	10.8742	0.3523	3.2400	0	0.00 %
6	11.6247	9.6390	10.5775	0.2825	2.6707	0	0.00 %
7	12.0254	9.6477	10.5500	0.3196	3.0291	0	0.00 %
8	11.8026	9.6793	10.6333	0.3014	2.8345	0	0.00 %
9	12.3746	9.9711	11.0079	0.3554	3.2285	0	0.00 %
10	11.8426	9.6829	10.8226	0.3345	3.0910	0	0.00 %
		Average	10.6401	0.3155	2.9595		
		St dev	0.2169	0.0634	0.5672		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.7371	-4.7616	-3.8202	0.3786	0.3290	0.2913	4.3335	3.7657	3.3335
2	8.9463	-3.8966	-4.1269	0.6180	0.8834	0.6530	6.9080	9.8740	7.2987
3	8.3289	-3.1094	-4.9993	0.4707	0.5922	0.7017	5.6515	7.1101	8.4246
4	7.8763	-4.5611	-4.8372	0.5851	0.4557	0.7289	7.4291	5.7853	9.2541
5	9.2389	-4.0131	-4.0010	0.4285	0.6737	0.5131	4.6380	7.2921	5.5538
6	8.6101	-4.1953	-4.3900	0.6619	0.4626	0.5504	7.6880	5.3727	6.3929
7	8.7193	-3.7092	-4.4729	0.7869	0.6687	0.7390	9.0242	7.6686	8.4756
8	9.2538	-3.5853	-3.7572	0.3434	0.5110	0.4179	3.7109	5.5218	4.5165
9	9.1355	-3.9156	-4.4213	0.6633	1.0170	1.2199	7.2609	11.1328	13.3530
10	9.7512	-3.1710	-3.3096	0.4228	0.8061	0.5634	4.3356	8.2664	5.7775

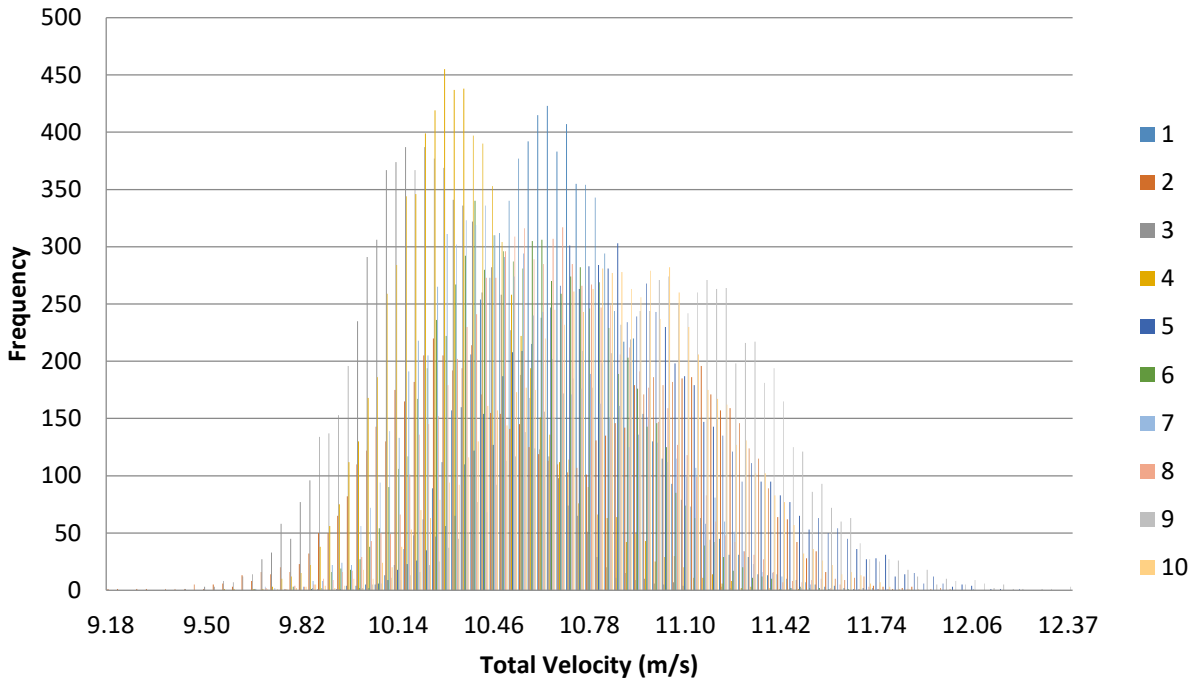


Figure 1. Velocity histogram for each interval (100 bins).

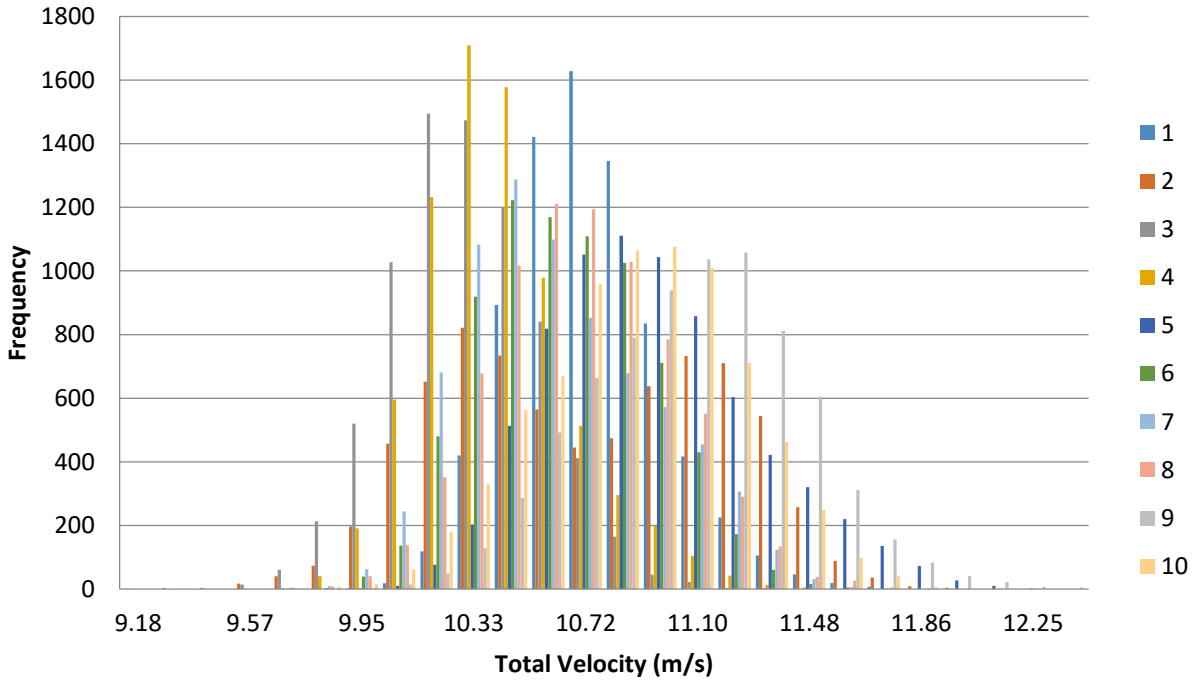
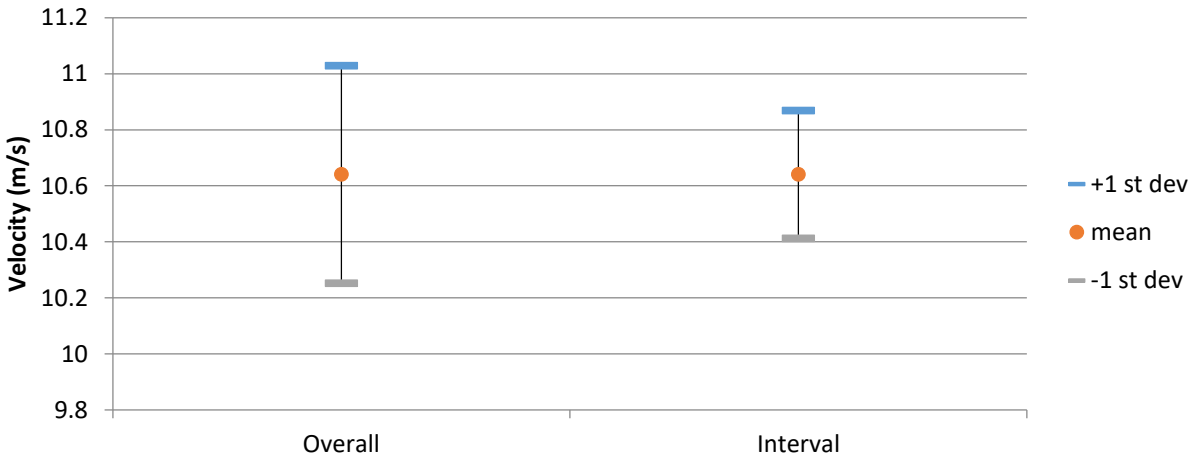
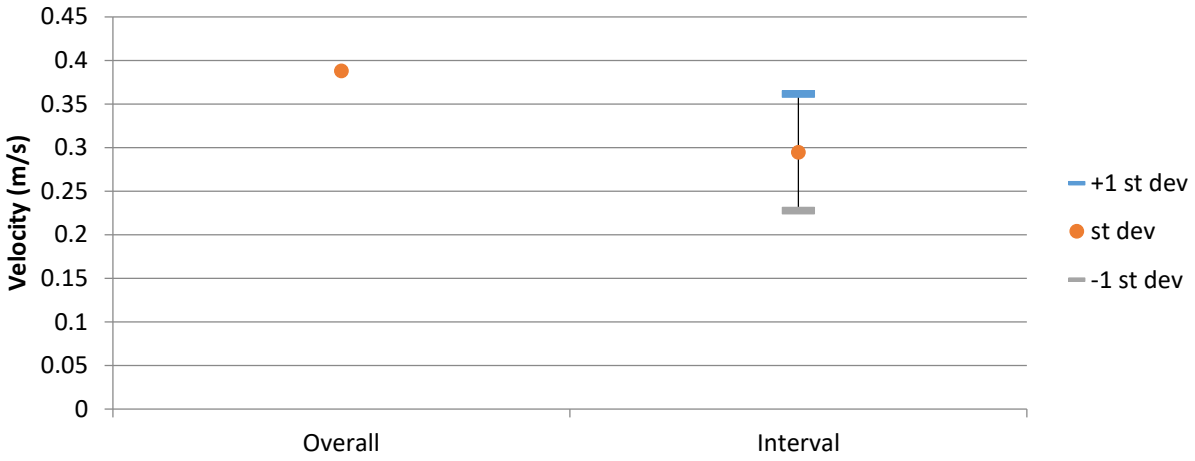


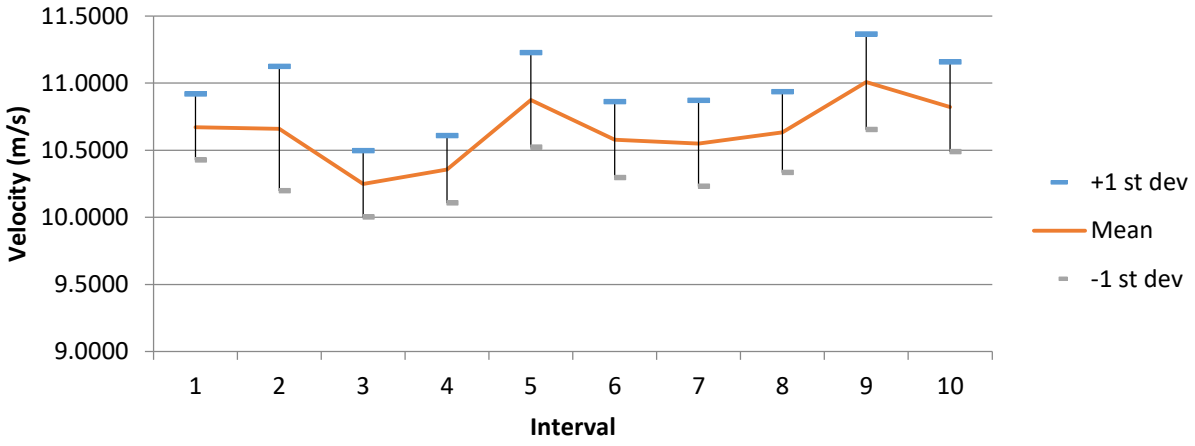
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 53
Blockage Condition: All buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: C3
First Sample Date: 13-Aug-13
First Sample Time: 09:53:59.062

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	13.4357	8.4939	10.4155	0.5760
u	10.9000	6.6600	9.0314	0.5169
v	-1.6800	-8.3800	-4.7788	1.0337
w	3.0900	-5.3400	-1.2450	1.2353

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	10.9421	9.1735	10.0565	0.2529	2.5145	0	0.00 %
2	12.0878	9.3216	10.3539	0.2999	2.8969	0	0.00 %
3	12.7783	9.0046	10.6831	0.6013	5.6282	1	0.01 %
4	13.4357	9.1681	11.1195	0.5863	5.2729	0	0.00 %
5	12.3363	9.5546	10.6220	0.3941	3.7107	0	0.00 %
6	11.6990	9.4056	10.5515	0.3423	3.2440	0	0.00 %
7	13.2065	9.3589	10.4405	0.4113	3.9394	0	0.00 %
8	13.2073	9.0781	10.6444	0.6057	5.6906	0	0.00 %
9	11.0400	8.4939	9.9385	0.2959	2.9775	0	0.00 %
10	11.1178	8.5623	9.7451	0.2680	2.7506	0	0.00 %
		Average	10.4155	0.4058	3.8625		
		St dev	0.3861	0.1344	1.1675		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.2001	-3.5271	-1.9043	0.2108	0.4339	0.5056	2.2914	4.7165	5.4959
2	9.2845	-4.1508	-1.8447	0.2312	0.3523	0.5309	2.4902	3.7949	5.7185
3	8.9779	-5.3834	-1.8172	0.4921	0.5922	1.0062	5.4810	6.5961	11.2077
4	9.2348	-5.6589	-2.3976	0.5236	0.6256	0.5179	5.6701	6.7741	5.6084
5	9.4392	-4.2564	-2.2681	0.2515	0.5306	0.5277	2.6648	5.6215	5.5901
6	9.4038	-4.3596	-1.8885	0.2398	0.5106	0.3580	2.5505	5.4295	3.8066
7	8.5801	-5.7928	-0.5349	0.6199	0.8354	0.7935	7.2249	9.7370	9.2483
8	8.7221	-5.8836	-0.6996	0.5938	1.1000	0.9620	6.8085	12.6114	11.0292
9	8.6442	-4.8029	0.5073	0.3604	0.4382	0.7021	4.1696	5.0698	8.1222
10	8.8274	-3.9720	0.3972	0.3710	0.7336	0.7114	4.2026	8.3101	8.0586

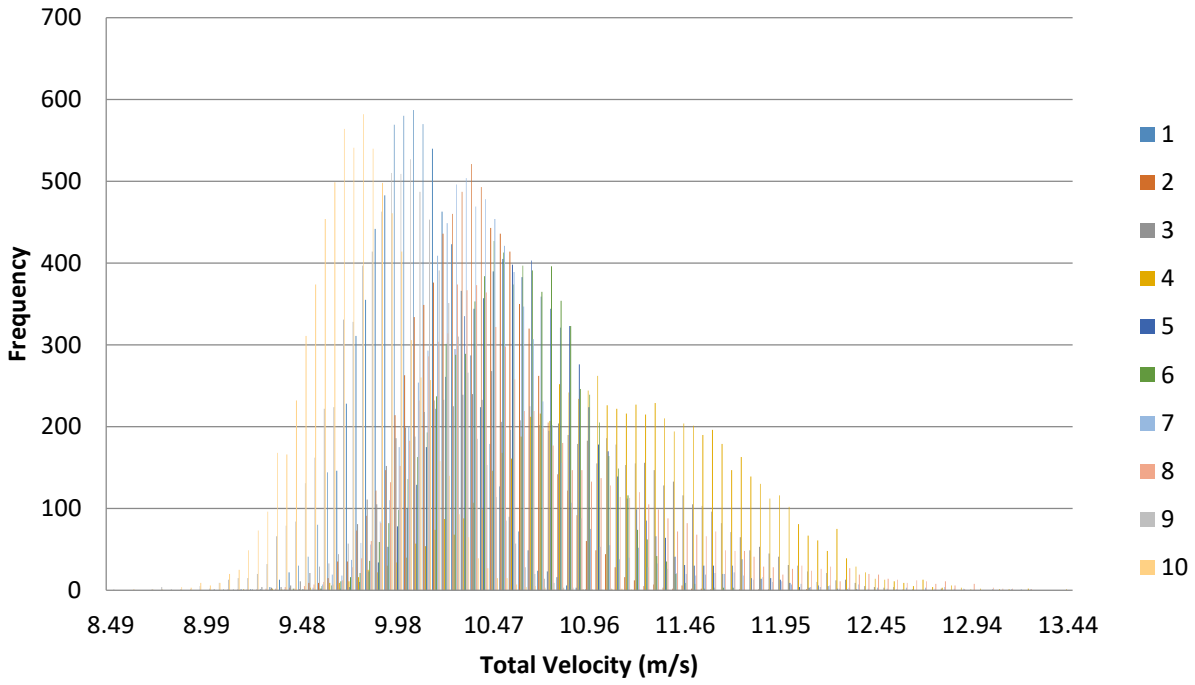


Figure 1. Velocity histogram for each interval (100 bins).

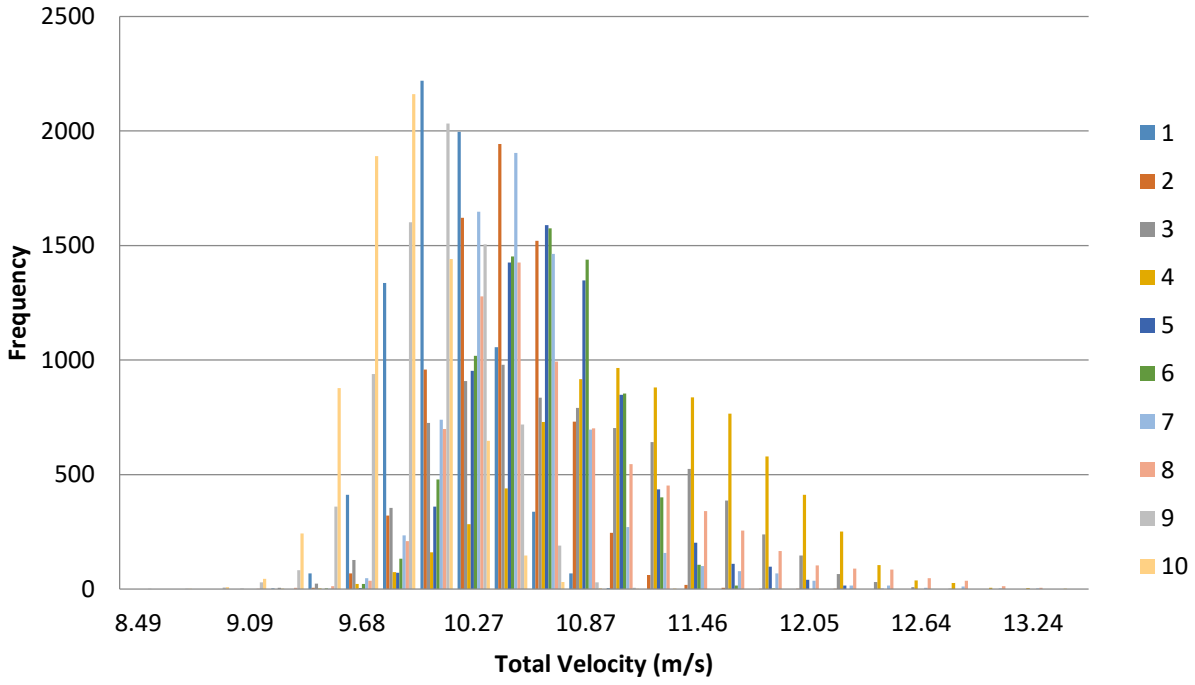
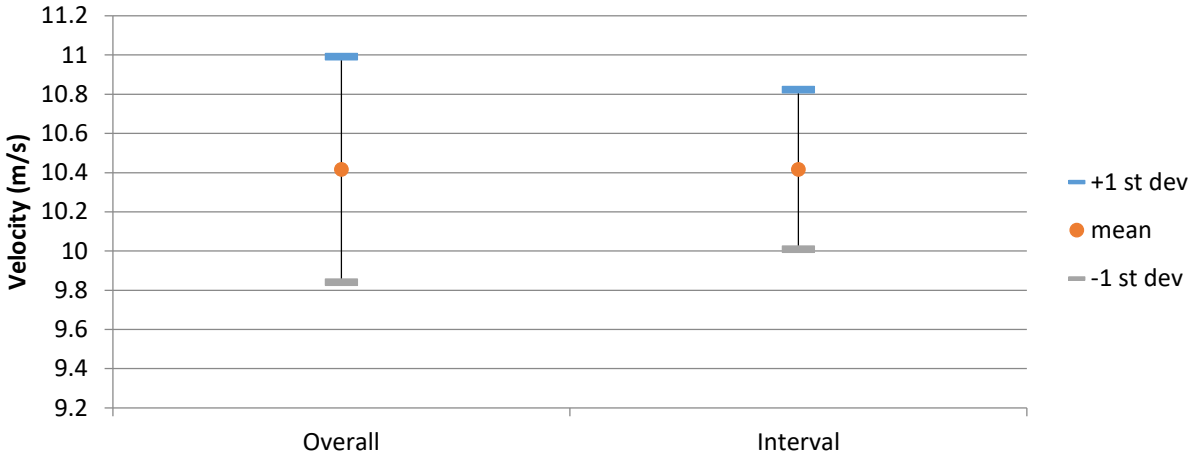
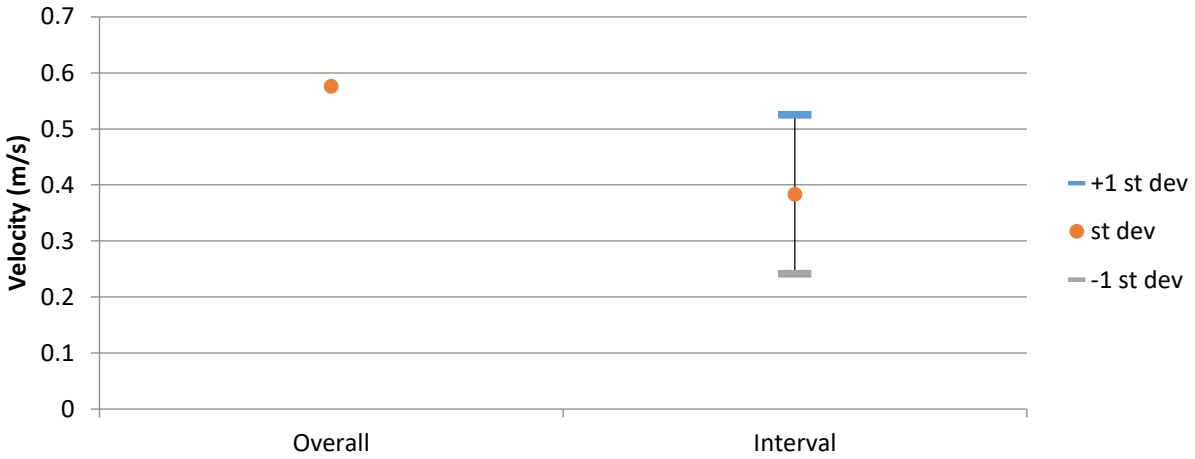


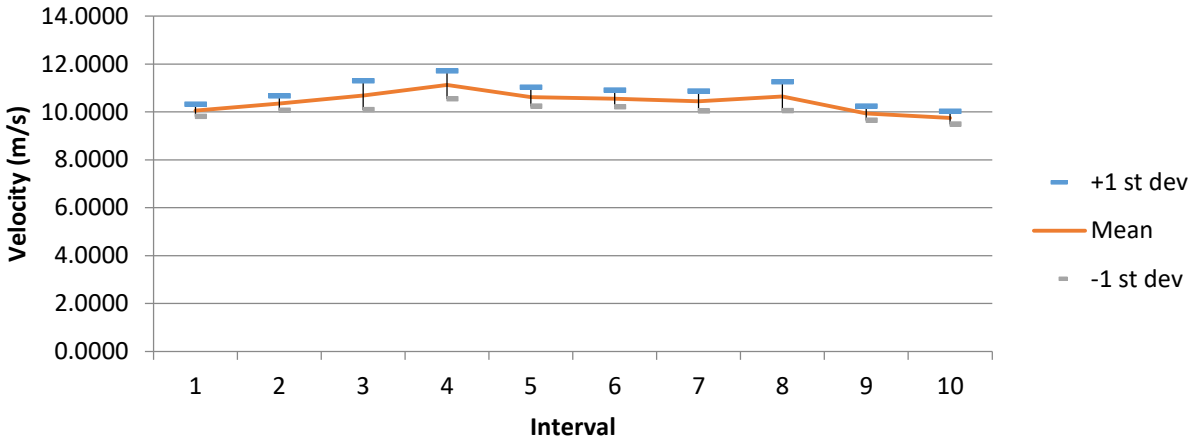
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 54
Blockage Condition: All Buildings
Blower Frequency: 50 Hz
Inlet Probe Location: C4
First Sample Date: 13-Aug-13
First Sample Time: 09:55:45.078

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	13.3495	7.5834	9.4341	0.4121
u	11.0000	6.2900	8.7872	0.4312
v	0.8770	-7.5400	-3.0581	0.9687
w	3.1600	-4.5200	-0.4447	1.1323

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	10.6600	7.5834	9.2534	0.3591	3.5041
2	10.8061	8.2982	9.4732	0.3319	3.4739
3	10.6875	8.2271	9.3820	0.3259	3.9678
4	11.1552	8.3722	9.6414	0.3826	3.5493
5	11.0025	8.2683	9.4994	0.3372	3.6089
6	11.1298	8.1763	9.3136	0.3361	3.3415
7	10.4050	8.2443	9.3807	0.3135	3.5247
8	10.5259	7.8470	9.3454	0.3294	6.6156
9	13.3495	7.6908	9.7450	0.6447	3.9551
10	10.5982	7.7161	9.3066	0.3681	3.9522
		Average	9.4341	0.3728	3.9493
		St Dev	0.1572	0.0978	0.9143

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.5680	-3.3603	0.4797	0.3900	0.6062	0.5501	4.5516	7.0751	6.4206
2	8.6582	-3.7444	-0.2659	0.3466	0.5039	0.6491	4.0034	5.8197	7.4970
3	8.7693	-3.2115	-0.3445	0.3431	0.4159	0.7090	3.9128	4.7432	8.0852
4	8.9614	-3.3884	-0.3541	0.3223	0.6179	0.8394	3.5966	6.8950	9.3665
5	9.1012	-2.2460	-0.8293	0.3469	0.9865	0.8335	3.8119	10.8388	9.1577
6	8.9558	-2.3668	0.3264	0.3817	0.6806	0.5771	4.2620	7.5994	6.4435
7	8.9617	-2.4839	-0.6918	0.3078	0.2866	0.9783	3.4343	3.1980	10.9162
8	8.8990	-2.4476	-1.1541	0.3332	0.5132	0.7449	3.7441	5.7674	8.3710
9	8.5235	-3.8586	-0.4423	0.6037	1.6601	2.1279	7.0824	19.4766	24.9655
10	8.4738	-3.4738	-1.1715	0.3099	0.5665	1.0419	3.6567	6.6857	12.2954

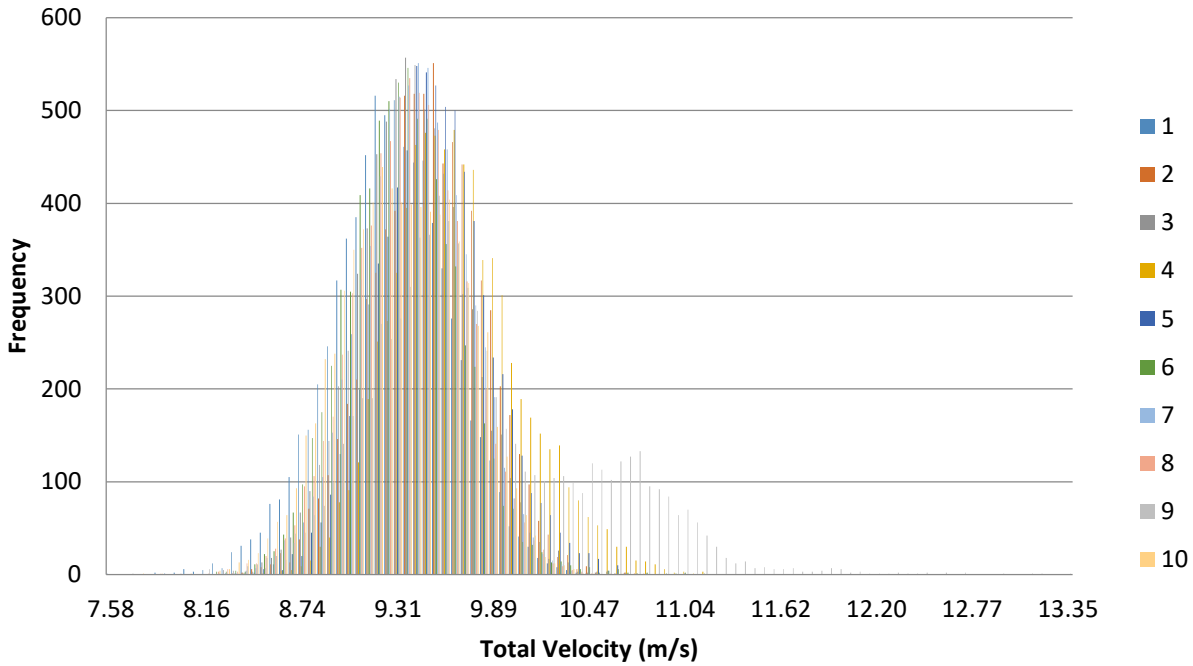


Figure 1. Velocity histogram for each interval (100 bins).

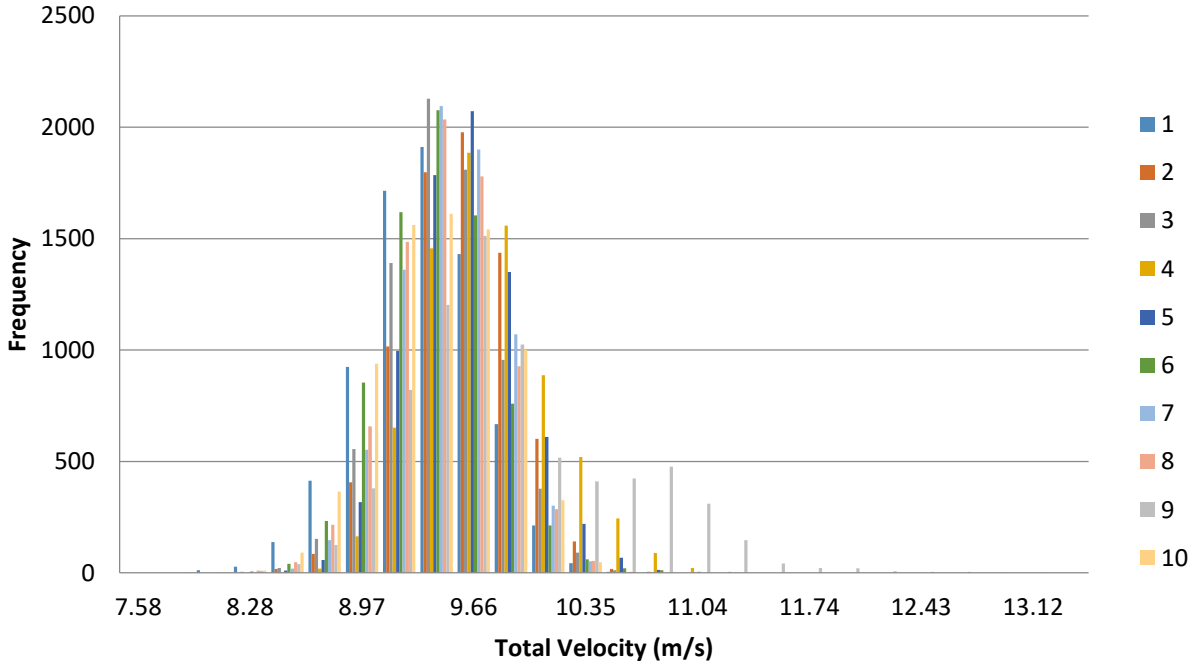
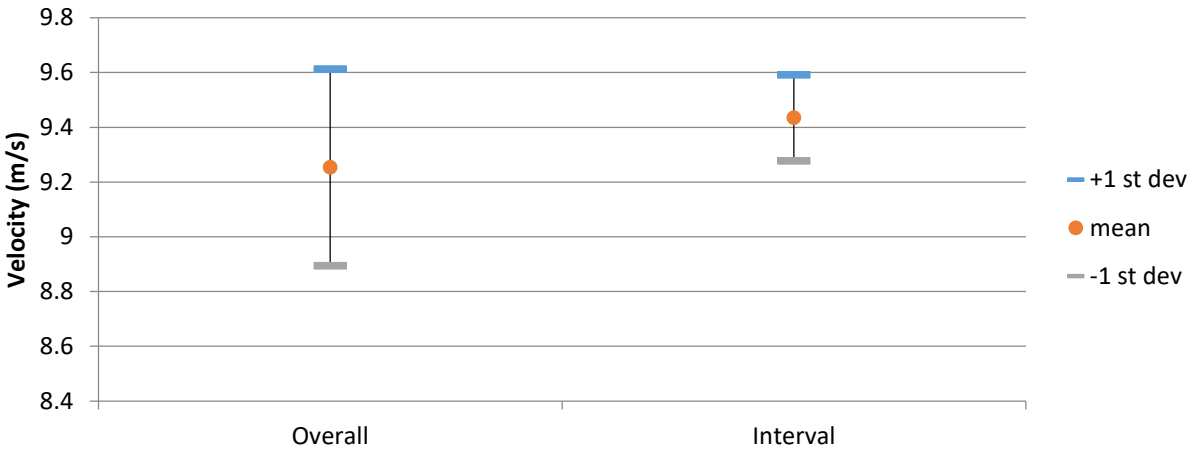
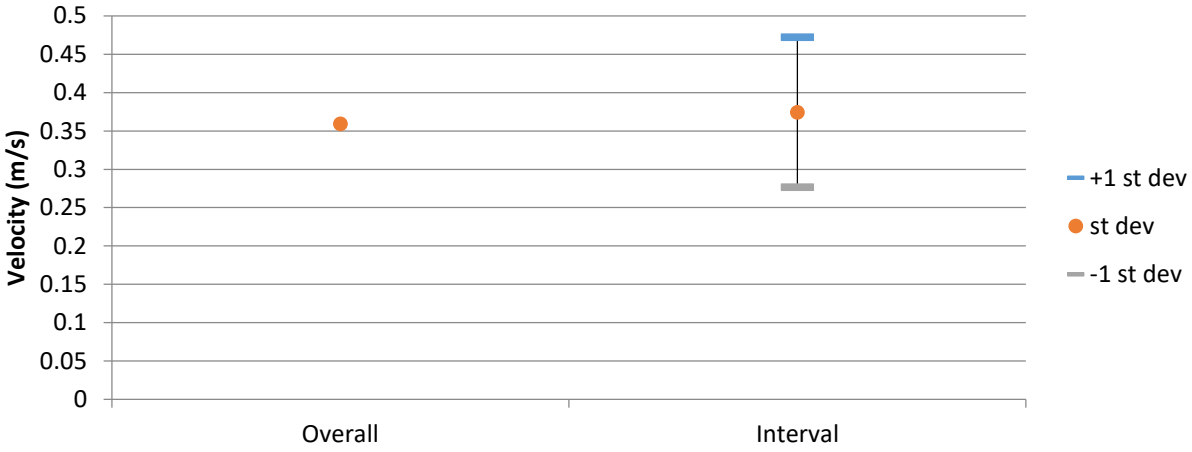


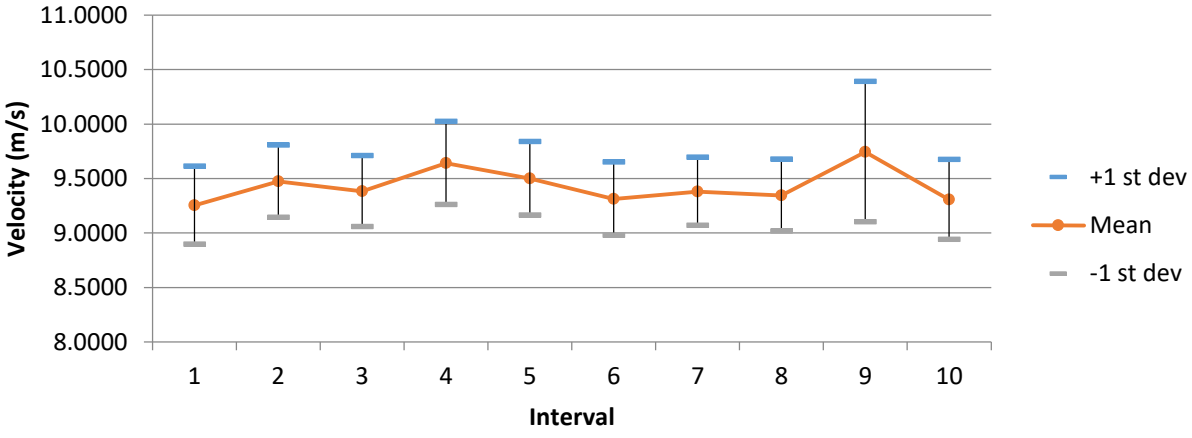
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 55
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: C5
First Sample Date: 13-Aug-13
First Sample Time: 09:57:46.421

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.7184	7.0269	9.0758	0.2798
u	10.1000	5.7500	8.2747	0.3932
v	-1.0800	-6.8800	-3.5670	0.7802
w	2.8700	-2.4400	-0.2780	0.6436

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	9.8306	8.0672	9.0138	0.2288	2.6294
2	10.1339	8.2008	9.1444	0.2404	2.4355
3	10.0292	8.3263	9.2150	0.2244	2.6202
4	9.9830	8.1001	9.0587	0.2374	2.6164
5	9.8121	8.1411	9.0109	0.2358	2.6348
6	10.6519	8.1318	9.1208	0.2403	2.8500
7	10.2476	8.1709	9.1312	0.2602	3.5937
8	10.7184	8.1291	9.1144	0.3275	3.3902
9	10.4148	7.0269	8.9365	0.3030	3.8986
10	10.5913	7.3939	9.0124	0.3514	2.9190
		Average	9.0758	0.2649	2.9588
		St Dev	0.0833	0.0455	0.4696

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.5164	-2.8768	-0.4198	0.2358	0.3093	0.4102	2.7689	3.6317	4.8165
2	8.3286	-3.6191	-0.8583	0.2717	0.5682	0.2848	3.2619	6.8229	3.4191
3	8.0849	-4.3752	-0.4473	0.2565	0.2612	0.3533	3.1726	3.2302	4.3697
4	8.3198	-3.4810	-0.2928	0.3022	0.6431	0.4358	3.6324	7.7296	5.2385
5	8.5862	-2.6461	-0.5325	0.2448	0.2835	0.3236	2.8508	3.3014	3.7693
6	8.4754	-3.2427	-0.5765	0.2719	0.4839	0.5074	3.2076	5.7096	5.9862
7	8.2006	-3.9041	-0.3457	0.3742	0.6415	0.5334	4.5634	7.8221	6.5040
8	7.8591	-4.4910	-0.1548	0.3836	0.6206	0.8298	4.8804	7.8959	10.5590
9	8.1378	-3.5070	0.3383	0.4891	0.8468	0.5997	6.0108	10.4062	7.3689
10	8.2382	-3.5267	0.5094	0.4058	0.5409	0.5694	4.9260	6.5660	6.9121

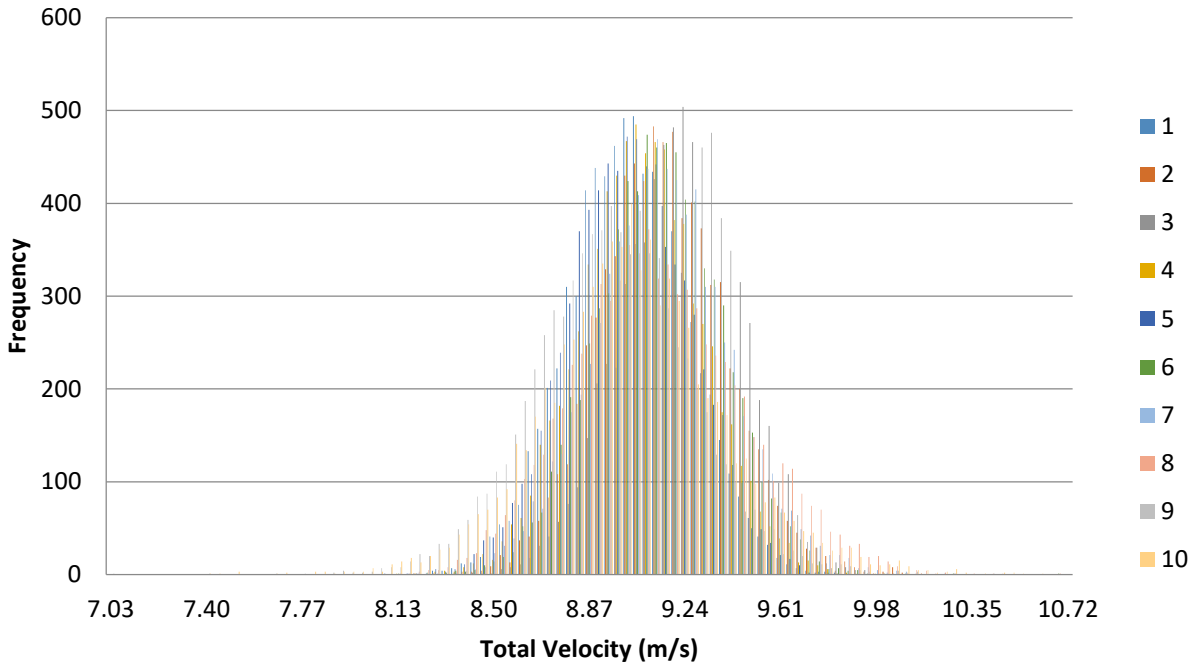


Figure 1. Velocity histogram for each interval (100 bins).

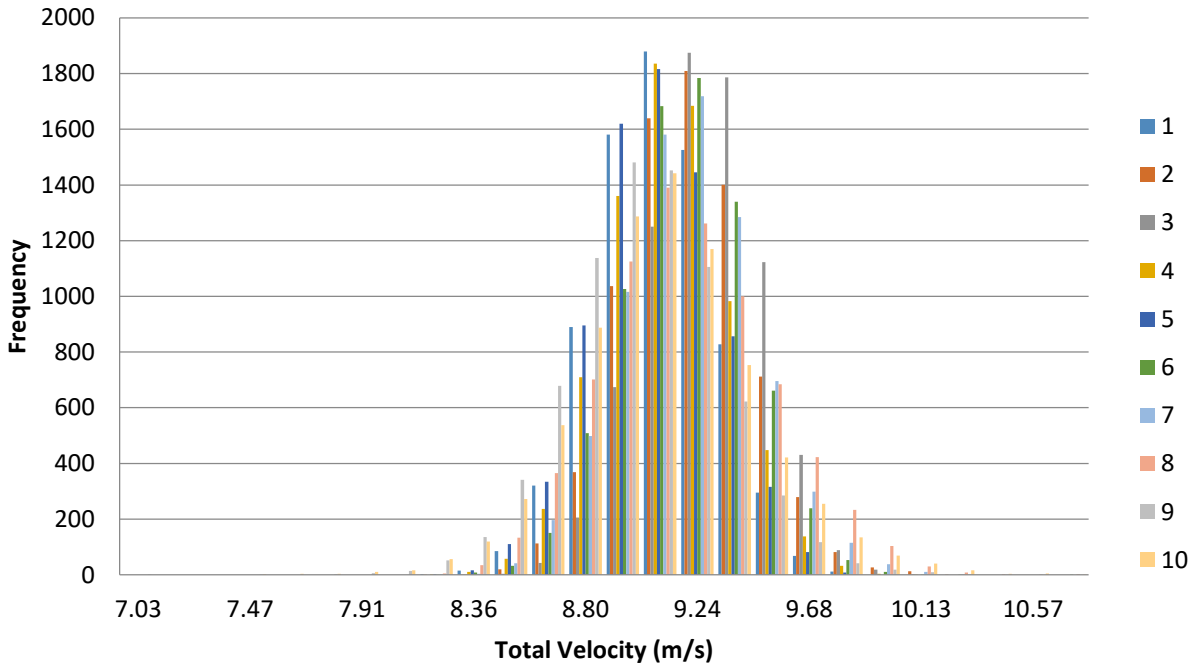
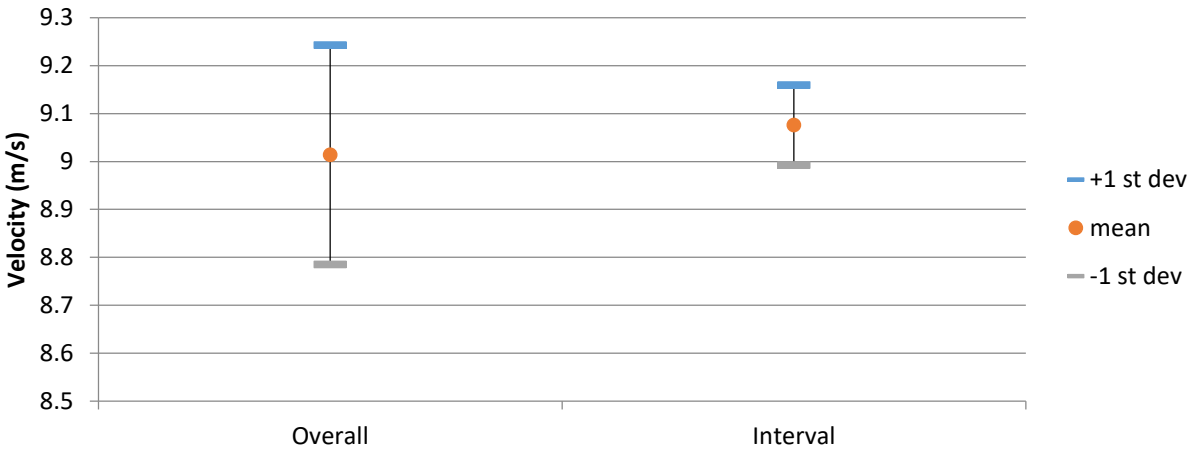
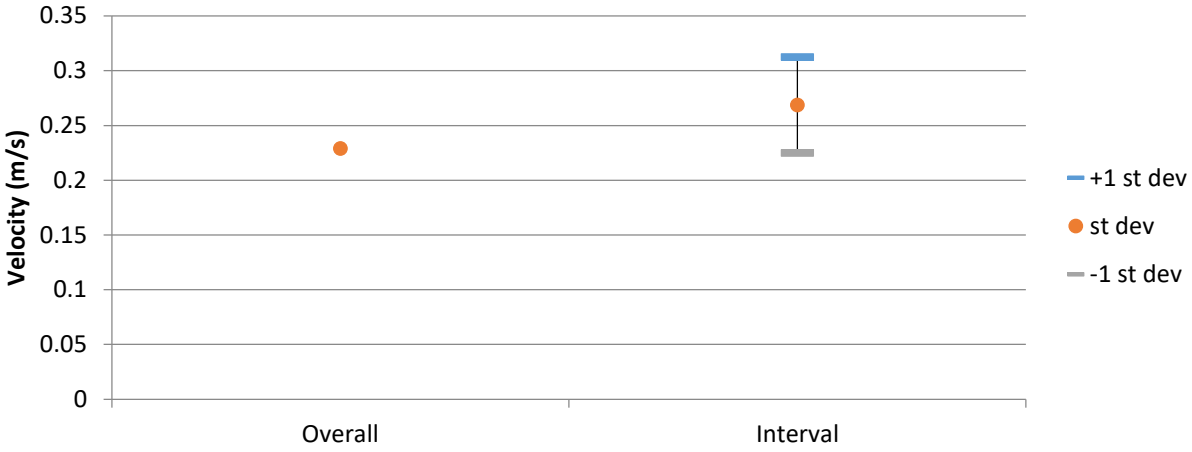


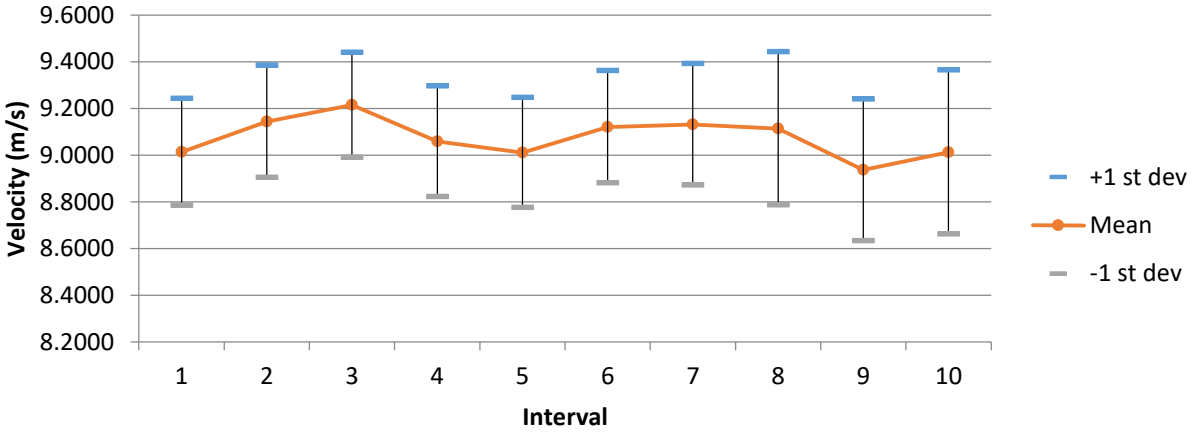
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 56
Blockage Condition: All buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: B5
First Sample Date: 13-Aug-13
First Sample Time: 09:59:51.984

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.6277	6.4741	8.3958	0.5728
u	9.6400	4.7900	6.9544	0.6005
v	-1.3900	-7.5900	-4.4420	0.8413
w	3.2900	-4.8500	-0.5007	1.1852

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	10.7537	6.8428	8.2759	0.3756	4.5389	0	0.00 %
2	10.4947	7.0872	8.6041	0.6200	7.2059	64	0.51 %
3	11.0115	6.7108	8.6551	0.5332	6.1602	510	4.08 %
4	11.6277	6.5892	8.2921	0.4415	5.3242	14	0.11 %
5	9.0702	6.4741	7.9022	0.2626	3.3237	0	0.00 %
6	10.0392	6.6274	7.9778	0.3510	4.3994	0	0.00 %
7	9.4082	6.8278	7.9461	0.3035	3.8194	0	0.00 %
8	11.6133	7.0993	8.9325	0.4919	5.5066	1	0.01 %
9	10.5783	7.2366	8.9057	0.5042	5.6610	56	0.45 %
10	10.1571	6.4962	8.4897	0.4323	5.0921	0	0.00 %
		Average	8.3981	0.4316	5.1031		
		St dev	0.3624	0.1046	1.0812		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	7.0753	-4.1455	-0.0515	0.5554	0.6313	0.8226	7.8493	8.9224	11.6257
2	6.6219	-5.3519	-0.6477	0.6414	0.4942	0.9210	9.6859	7.4627	13.9091
3	6.5421	-5.3777	-0.5188	0.6420	0.6741	1.5300	9.8126	10.3039	23.3871
4	6.6704	-4.7907	0.5335	0.5684	0.6096	0.7276	8.5209	9.1385	10.9079
5	6.8199	-3.9354	0.0850	0.3349	0.3119	0.5468	4.9110	4.5729	8.0170
6	6.6416	-4.3536	-0.1652	0.3570	0.5221	0.5258	5.3747	7.8610	7.9170
7	7.1249	-3.4408	-0.1944	0.3312	0.3683	0.5882	4.6488	5.1693	8.2550
8	7.3930	-4.5917	-1.7628	0.4391	0.6892	0.7189	5.9388	9.3230	9.7244
9	7.2655	-4.6478	-1.6982	0.6350	0.7705	1.1382	8.7397	10.6051	15.6661
10	7.3599	-3.8582	-0.5960	0.4994	0.7033	1.4525	6.7854	9.5562	19.7352

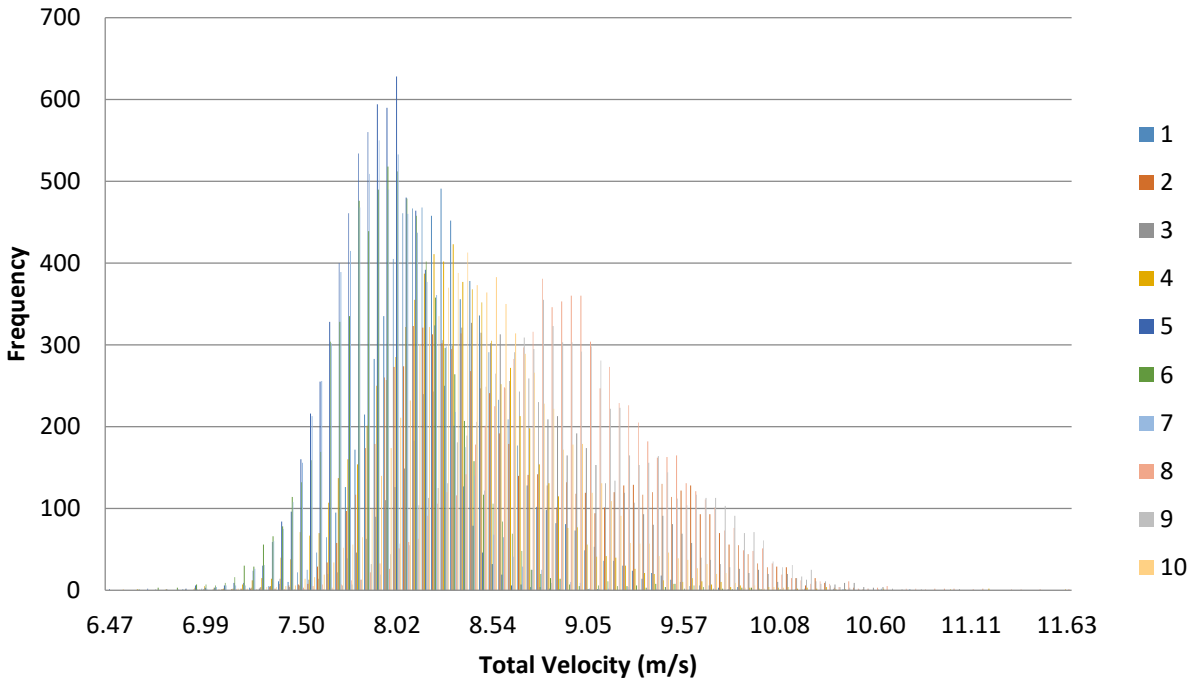


Figure 1. Velocity histogram for each interval (100 bins).

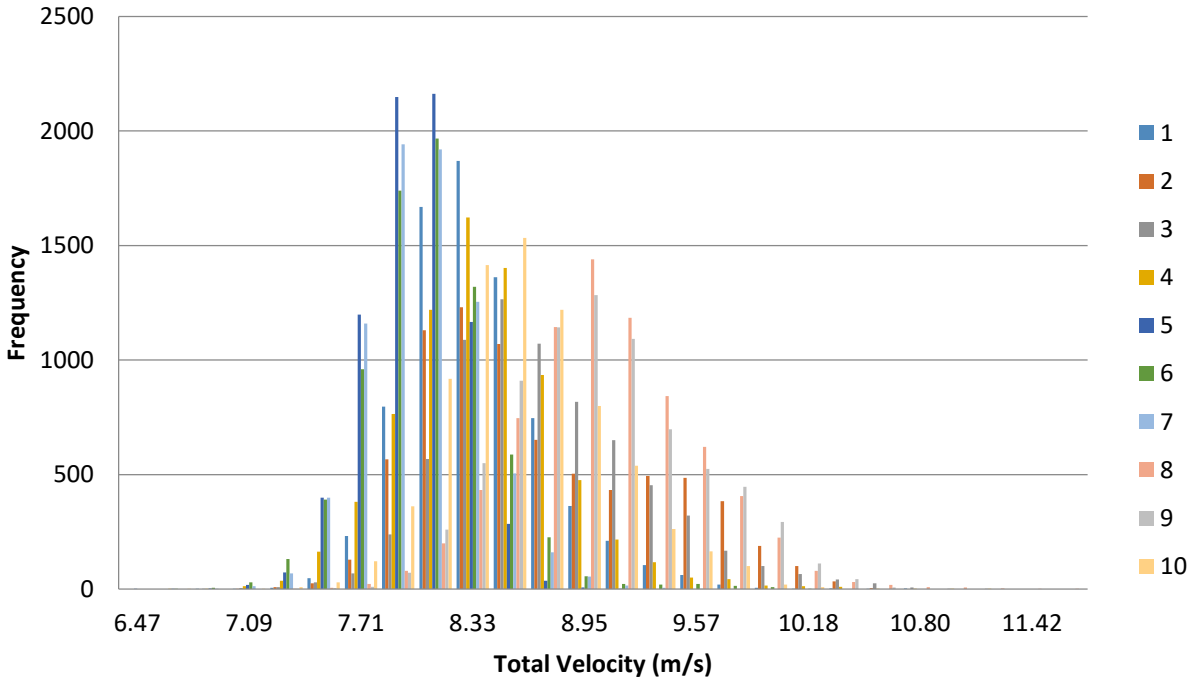
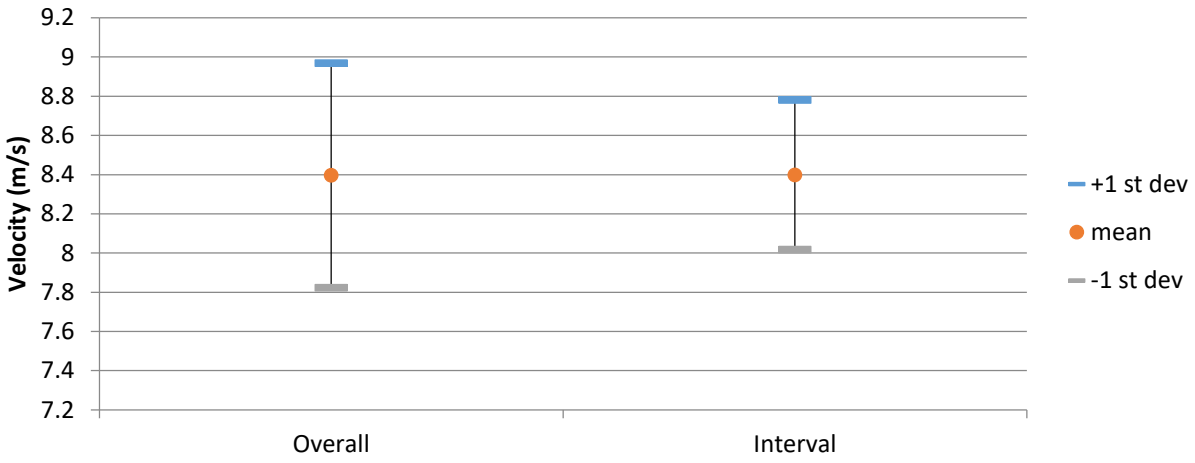
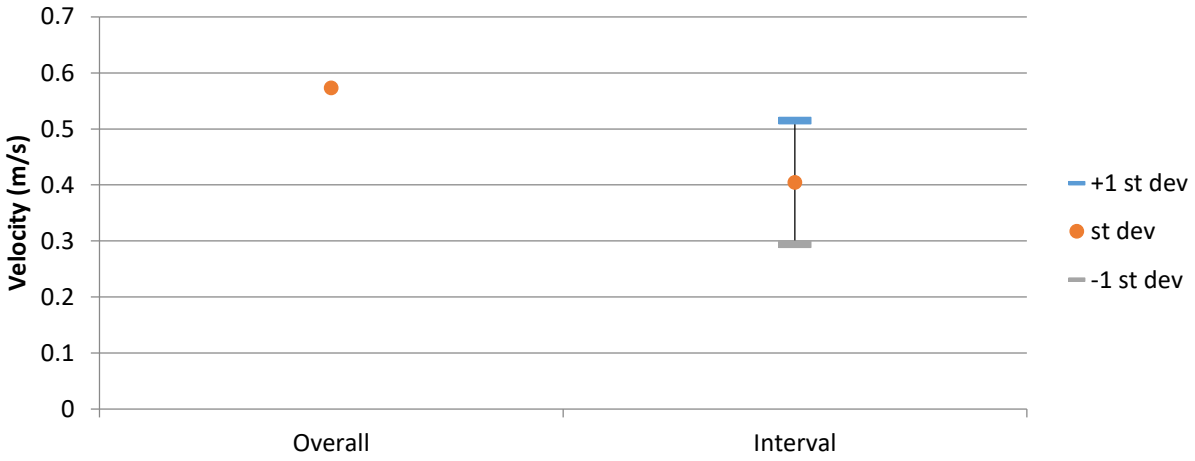


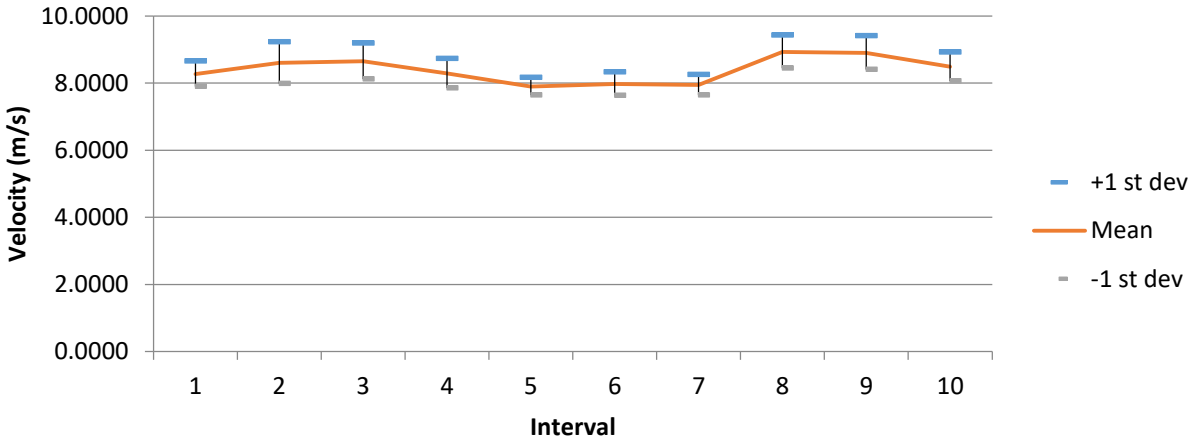
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 57
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: B4
First Sample Date: 13-Aug-13
First Sample Time: 10:02:15.531

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.7157	6.1633	8.4794	0.6366
u	9.9300	4.2900	7.2105	0.5849
v	0.1860	-7.5200	-4.1269	1.0830
w	2.7200	-4.7200	-0.7721	1.0826

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	9.3971	6.9356	8.2468	0.3672	4.4526	0	0.00 %
2	10.9479	7.4035	9.0975	0.5531	6.0793	43	0.34 %
3	11.2470	7.0941	9.1165	0.5569	6.1092	7	0.06 %
4	11.7157	6.1633	8.4402	0.6102	7.2303	490	3.92 %
5	10.7154	6.9482	8.7025	0.4908	5.6398	39	0.31 %
6	9.3892	6.3967	8.0014	0.4046	5.0570	0	0.00 %
7	11.2640	6.6235	8.5156	0.6488	7.6188	2	0.02 %
8	10.6360	6.7298	8.3336	0.5275	6.3295	0	0.00 %
9	9.0141	6.4273	7.8720	0.3691	4.6883	0	0.00 %
10	9.8878	7.0735	8.4701	0.4194	4.9511	0	0.00 %
		Average	8.4796	0.4948	5.8156		
		St dev	0.3890	0.0955	1.0077		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	7.1412	-4.0604	-0.2068	0.4314	0.3790	0.5371	6.0407	5.3077	7.5216
2	7.2711	-5.1136	-1.5944	0.5652	0.6967	0.8410	7.7726	9.5816	11.5668
3	7.1878	-5.3245	-1.4620	0.5798	0.5711	0.7776	8.0668	7.9453	10.8182
4	6.7559	-4.8671	-0.6247	0.6090	0.7362	0.9872	9.0137	10.8978	14.6120
5	6.8956	-4.7838	-2.0501	0.6129	0.7532	0.6275	8.8887	10.9227	9.0996
6	7.1082	-3.5077	0.0208	0.4828	0.6599	0.8285	6.7917	9.2839	11.6550
7	7.2043	-4.2354	-0.6865	0.5394	0.7953	1.3045	7.4871	11.0390	18.1068
8	7.5174	-3.3624	-0.7394	0.5348	0.7562	0.7118	7.1144	10.0597	9.4681
9	7.2976	-2.8506	-0.1642	0.4051	0.4522	0.5736	5.5516	6.1969	7.8607
10	7.6942	-3.2218	-0.2155	0.4631	0.9985	1.0393	6.0188	12.9771	13.5078

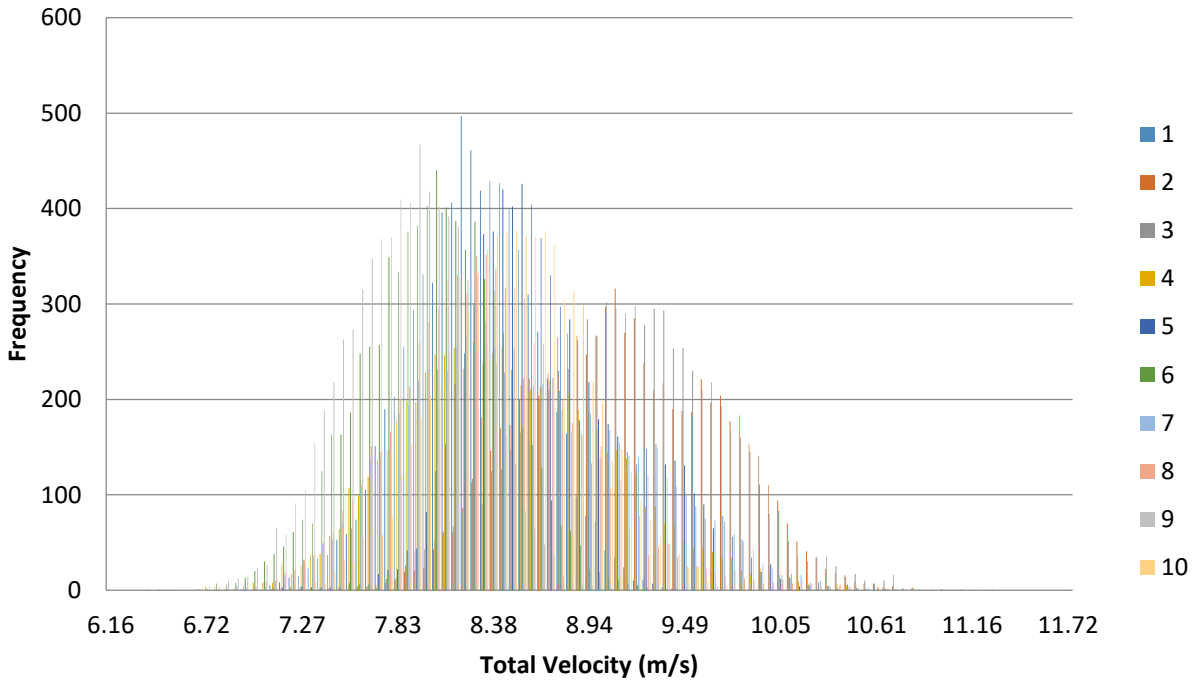


Figure 1. Velocity histogram for each interval (100 bins).

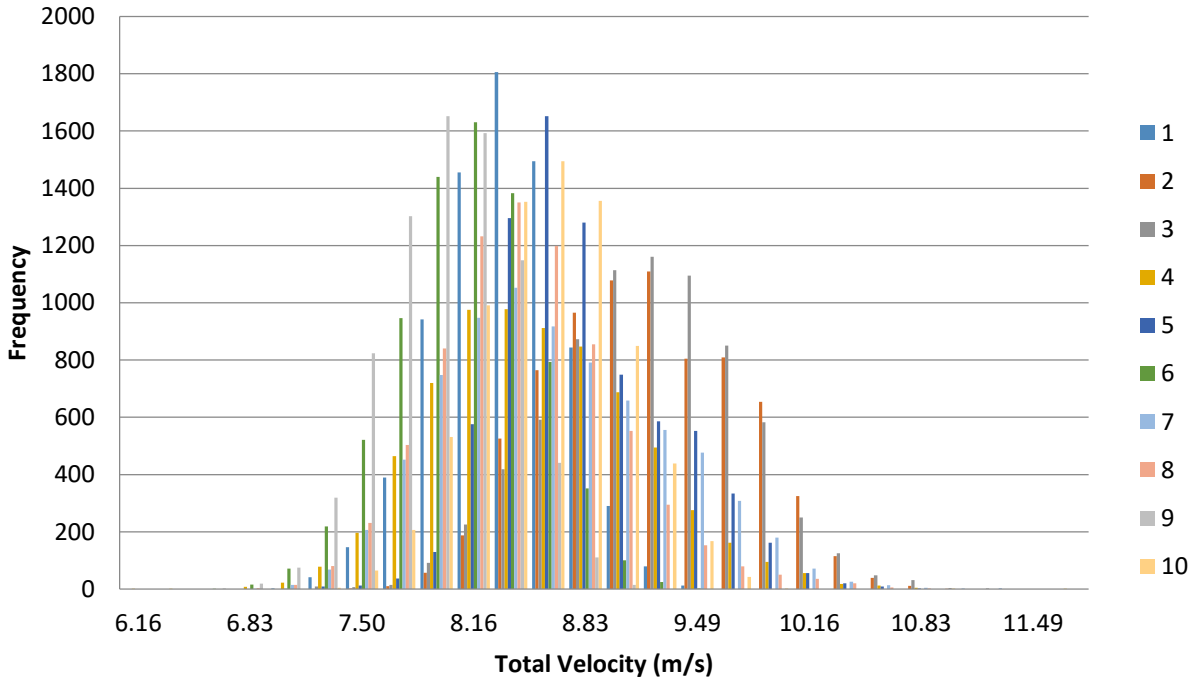
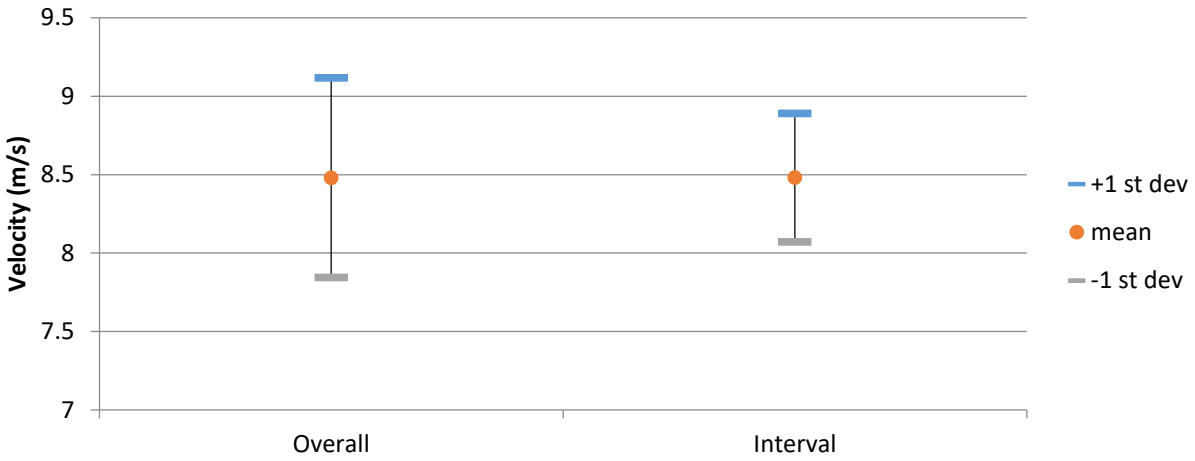
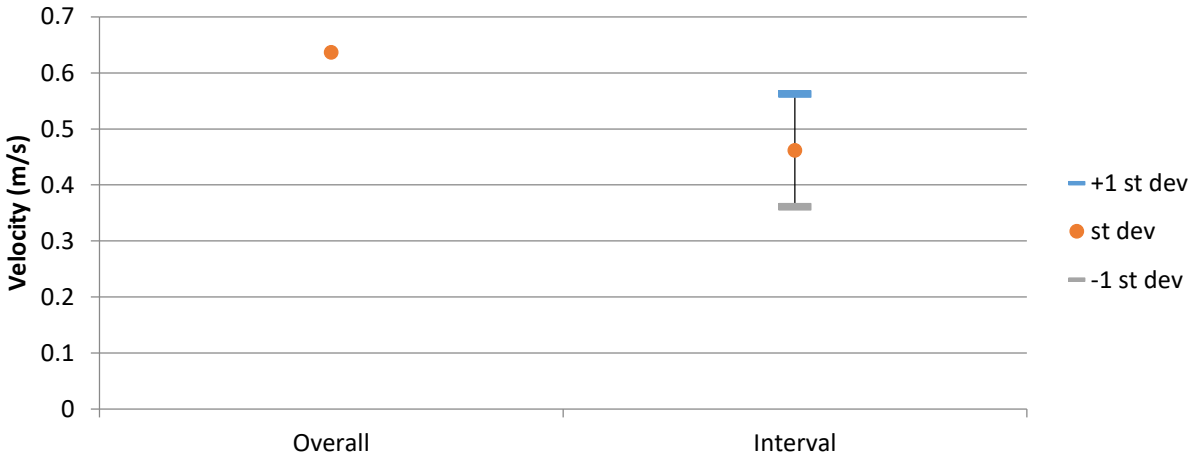


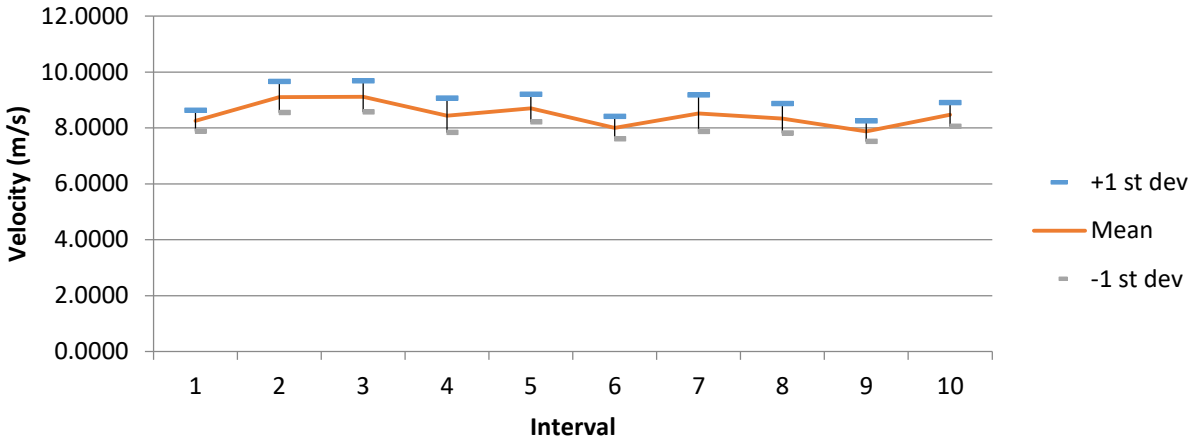
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 58
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: B3
First Sample Date: 13-Aug-13
First Sample Time: 10:03:53.453

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.3553	7.0782	8.9885	0.5783
u	11.0000	4.7400	7.4907	0.6746
v	-0.6940	-8.1200	-4.5943	1.0590
w	5.7000	-3.6500	-0.1271	1.5222

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	10.1226	7.2268	8.4543	0.4119	4.8722	0	0.00 %
2	10.7074	7.2158	8.9366	0.6188	6.9240	0	0.00 %
3	10.1279	7.4274	8.5869	0.3691	4.2987	0	0.00 %
4	11.0501	7.4983	8.9597	0.6648	7.4197	0	0.00 %
5	10.7336	7.4643	8.9035	0.5812	6.5277	0	0.00 %
6	11.4638	7.6913	9.2999	0.4699	5.0530	0	0.00 %
7	11.7973	7.0782	9.2500	0.5954	6.4365	187	1.50 %
8	12.3553	7.2743	9.2094	0.4169	4.5265	149	1.19 %
9	10.2992	7.6771	8.9794	0.2981	3.3196	94	0.75 %
10	11.5684	7.7792	9.4440	0.4080	4.3199	2106	16.85 %
		Average	9.0024	0.4834	5.3698		
		St dev	0.2962	0.1167	1.2887		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	7.3806	-3.8538	-1.0607	0.3912	0.6264	0.8061	5.3002	8.4874	10.9212
2	7.3987	-4.7433	-1.2666	0.4870	0.7570	0.7693	6.5822	10.2315	10.3981
3	7.4105	-4.1253	-1.2196	0.3052	0.4517	0.3907	4.1187	6.0951	5.2728
4	7.3868	-4.7935	-1.1593	0.4863	0.7573	1.0112	6.5833	10.2522	13.6898
5	7.9410	-3.6719	0.7429	0.5776	0.5306	1.3787	7.2735	6.6824	17.3622
6	8.5658	-3.3557	-0.5563	0.5672	0.7605	0.9313	6.6221	8.8786	10.8720
7	7.2149	-5.6242	-0.1270	0.6561	0.7735	1.0890	9.0932	10.7203	15.0931
8	7.2188	-5.6432	0.0475	0.5192	0.6214	0.6106	7.1926	8.6079	8.4582
9	7.1432	-5.1137	1.2632	0.5529	0.9149	0.8978	7.7405	12.8080	12.5691
10	7.1290	-5.2568	2.9490	0.6231	0.8622	1.0347	8.7404	12.0945	14.5134

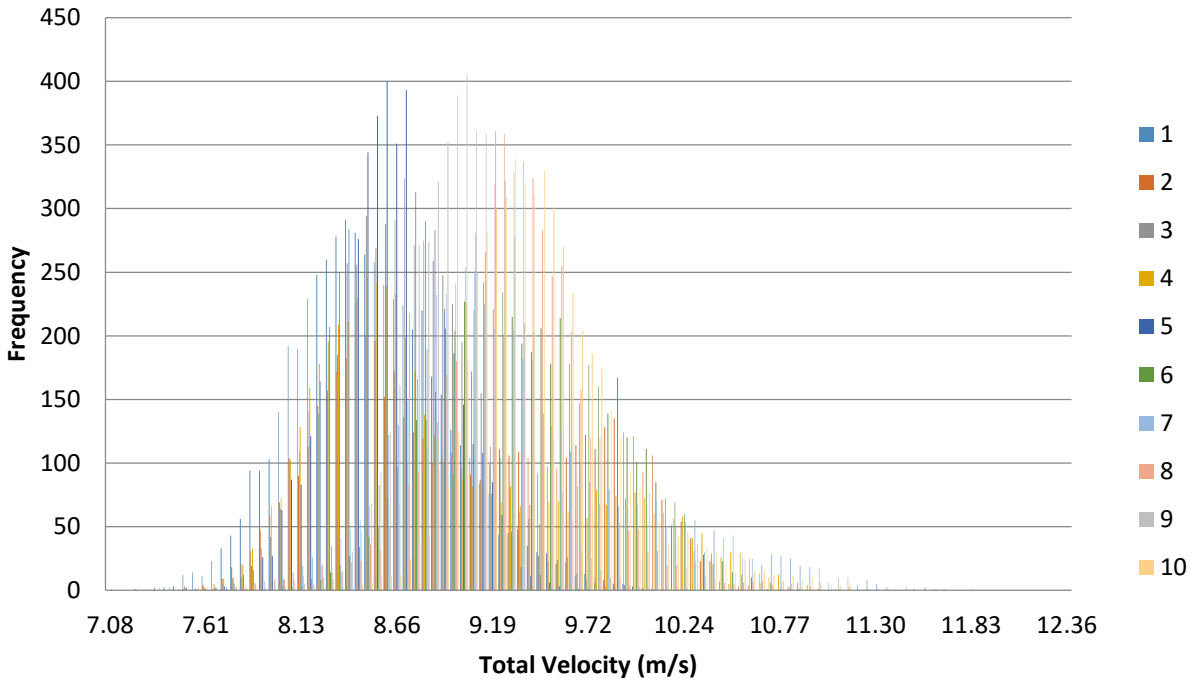


Figure 1. Velocity histogram for each interval (100 bins).

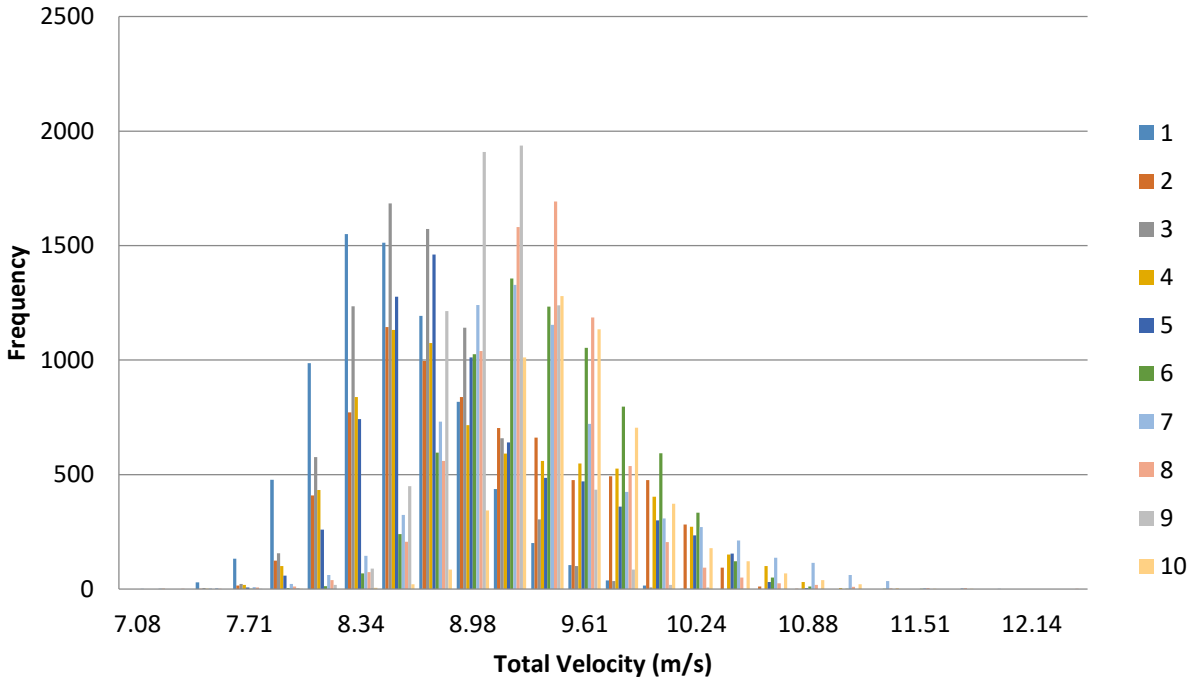
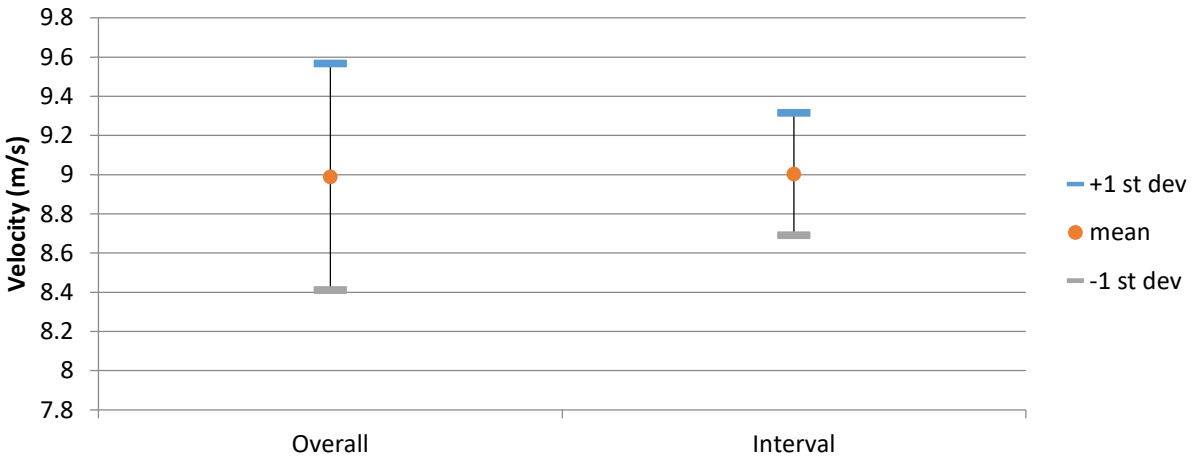
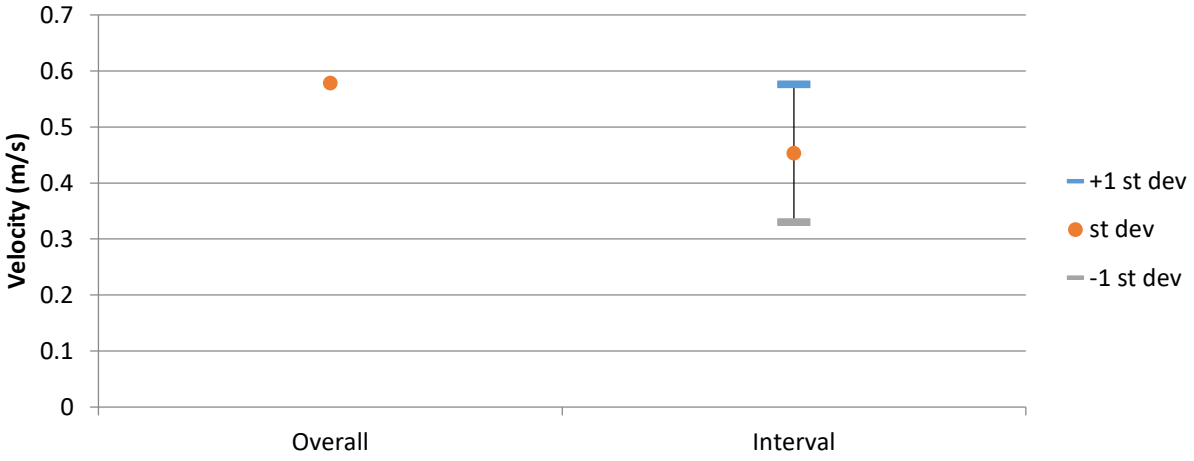


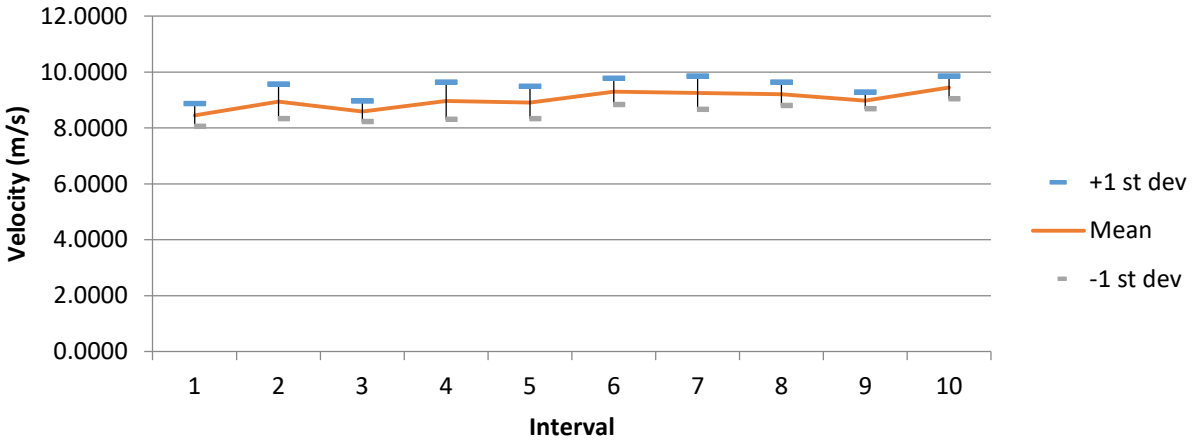
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 59
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: B2
First Sample Date: 13-Aug-13
First Sample Time: 10:07:18.468

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.5148	7.9068	9.4828	0.6348
u	9.1800	5.1100	7.4059	0.6827
v	-2.8800	-7.7300	-5.1717	0.6893
w	-0.6140	-5.2900	-2.7416	0.5243

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	10.4140	8.3074	9.2144	0.2928	3.1772	0	0.00 %
2	10.1191	7.9068	8.8985	0.3045	3.4222	2	0.02 %
3	11.3487	8.2275	9.7622	0.6145	6.2946	19	0.15 %
4	11.5148	8.6695	10.1420	0.5948	5.8651	11	0.09 %
5	11.4076	8.3374	9.6872	0.5979	6.1725	34	0.27 %
6	10.7996	8.3787	9.3759	0.4409	4.7022	0	0.00 %
7	11.1680	8.8706	10.1618	0.3686	3.6277	0	0.00 %
8	11.2505	8.3059	9.3677	0.5675	6.0582	52	0.42 %
9	10.9955	8.1698	9.1936	0.4216	4.5859	0	0.00 %
10	10.6842	7.9934	9.0259	0.4319	4.7849	9	0.07 %
		Average	9.4829	0.4635	4.8691		
		St dev	0.4178	0.1165	1.1291		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	7.2741	-4.9587	-2.6451	0.4641	0.3746	0.3706	6.3801	5.1491	5.0953
2	6.8024	-4.6883	-3.2160	0.5069	0.3858	0.5242	7.4514	5.6719	7.7060
3	7.6372	-5.4684	-2.5266	0.6857	0.5860	0.4991	8.9785	7.6734	6.5352
4	7.7533	-5.9816	-2.5630	0.7019	0.3886	0.3286	9.0535	5.0123	4.2382
5	7.4060	-5.6019	-2.6490	0.6662	0.5954	0.3928	8.9957	8.0392	5.3040
6	7.3777	-5.0964	-2.6757	0.5453	0.3485	0.3475	7.3913	4.7231	4.7104
7	8.0179	-5.8045	-2.2333	0.4761	0.3168	0.3238	5.9382	3.9516	4.0385
8	7.2193	-5.1775	-2.8472	0.6603	0.6446	0.4393	9.1459	8.9293	6.0848
9	7.3981	-4.5853	-2.8875	0.5257	0.4467	0.3617	7.1056	6.0384	4.8886
10	7.1729	-4.3575	-3.1718	0.7253	0.3944	0.6885	10.1124	5.4986	9.5989

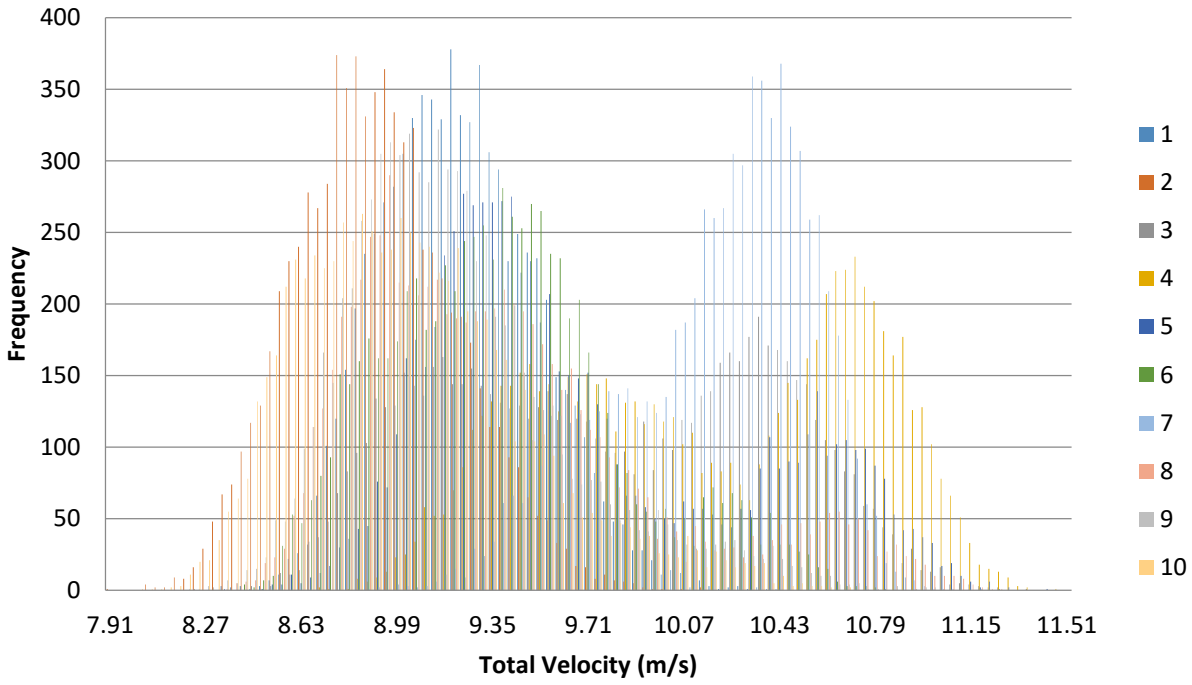


Figure 1. Velocity histogram for each interval (100 bins).

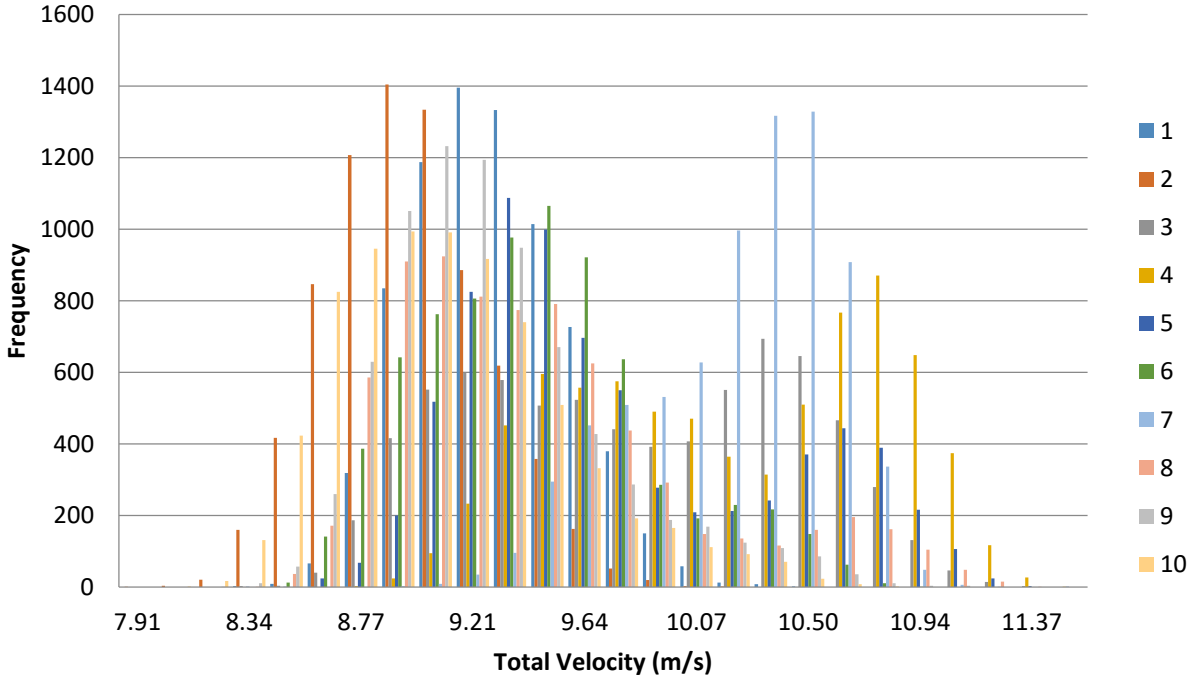
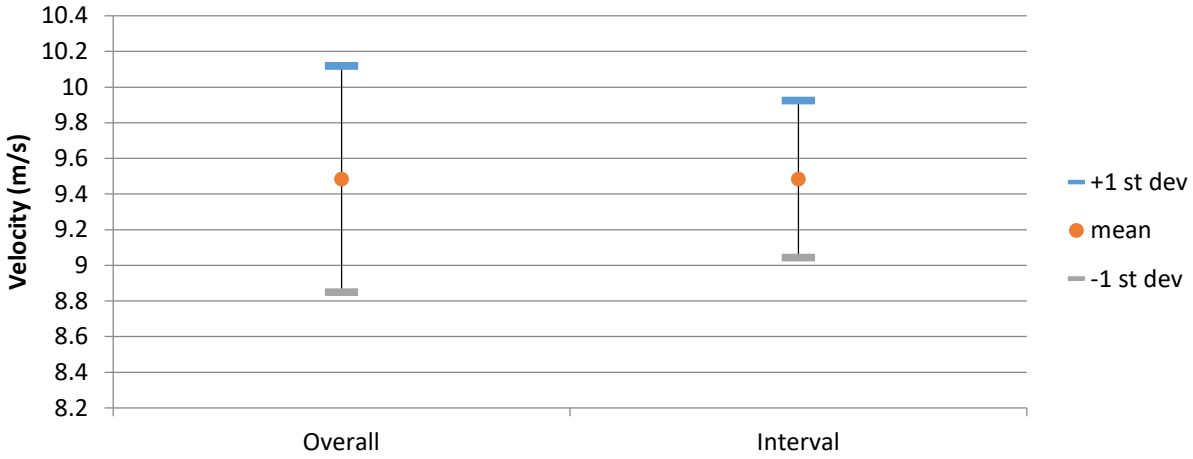
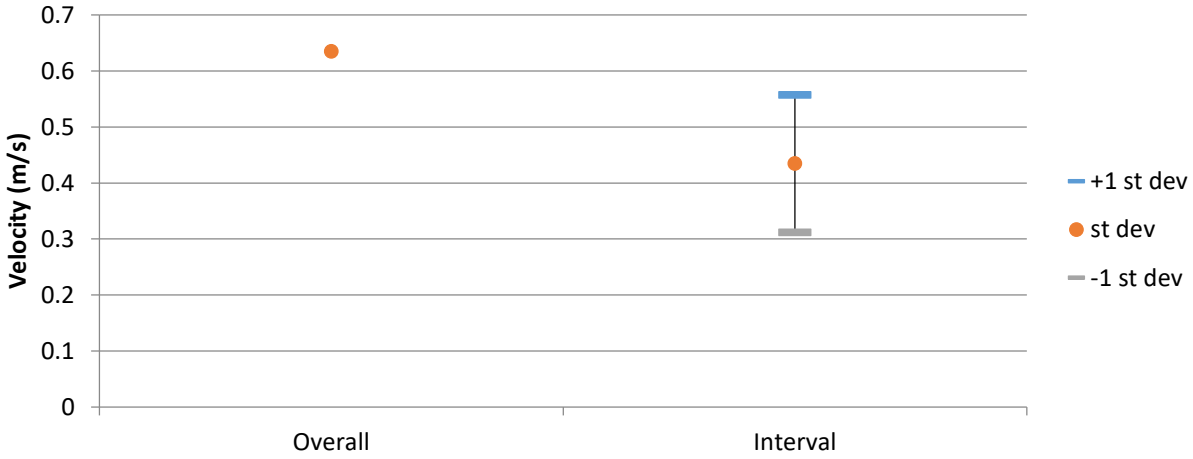


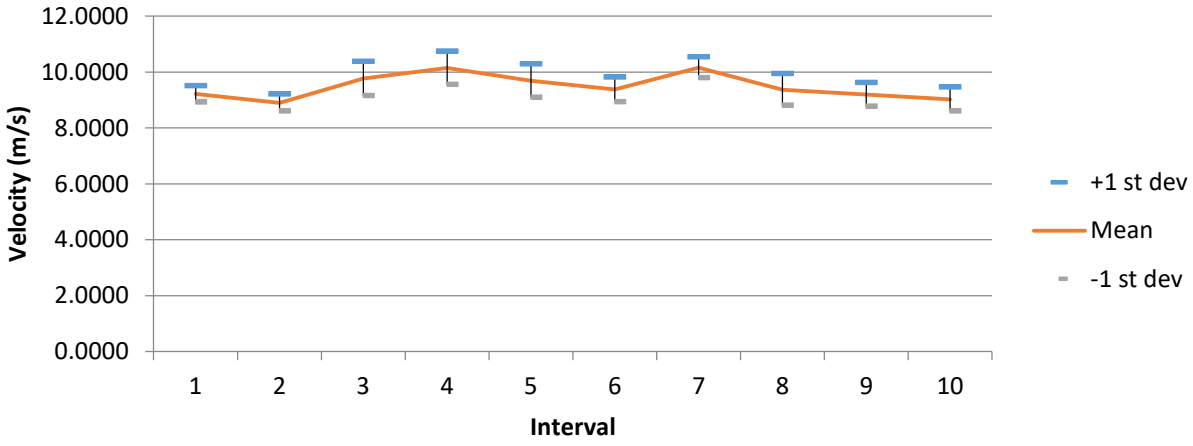
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 60
Blockage Condition: All buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: A2
First Sample Date: 13-Aug-13
First Sample Time: 10:09:10.125

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.0919	7.3369	9.4497	0.6515
u	8.6400	4.9200	6.9527	0.6780
v	-4.0600	-7.4500	-5.9015	0.4973
w	-0.3910	-4.1500	-2.3705	0.4765

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	10.8290	7.3369	9.3220	0.5889	6.3174	338	2.70 %
2	10.9424	7.9991	9.7327	0.6116	6.2838	178	1.42 %
3	10.9627	8.4296	9.8528	0.5574	5.6570	16	0.13 %
4	11.0919	8.3690	9.9700	0.5991	6.0092	11	0.09 %
5	9.9218	8.1752	8.8411	0.2271	2.5682	59	0.47 %
6	10.0236	8.0621	8.7405	0.2605	2.9798	87	0.70 %
7	10.1746	8.0642	8.9433	0.3256	3.6407	59	0.47 %
8	10.6849	8.4572	9.2755	0.3511	3.7856	27	0.22 %
9	10.8325	8.7455	9.8399	0.4743	4.8202	0	0.00 %
10	10.9197	8.5144	9.9636	0.4162	4.1768	0	0.00 %
		Average	9.4481	0.4412	4.6239		
		St dev	0.4589	0.1382	1.3208		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	6.7489	-6.0011	-2.2341	0.6658	0.3459	0.3632	9.8659	5.1247	5.3814
2	7.1420	-6.2205	-2.1635	0.6712	0.3990	0.3277	9.3979	5.5861	4.5880
3	7.2468	-6.2933	-2.1464	0.5725	0.3349	0.4693	7.9000	4.6217	6.4767
4	7.3633	-6.3624	-2.0695	0.5451	0.4578	0.5215	7.4024	6.2170	7.0820
5	6.4431	-5.4078	-2.6723	0.3682	0.3067	0.2964	5.7147	4.7596	4.6001
6	6.2789	-5.3398	-2.8349	0.4051	0.4125	0.3937	6.4512	6.5699	6.2694
7	6.4284	-5.5579	-2.7447	0.4526	0.2461	0.2754	7.0405	3.8281	4.2844
8	6.8296	-5.7053	-2.5736	0.4418	0.2574	0.2815	6.4684	3.7685	4.1214
9	7.5069	-5.8938	-2.3582	0.4984	0.3113	0.2276	6.6395	4.1462	3.0313
10	7.5193	-6.2324	-1.9068	0.4102	0.2820	0.4242	5.4557	3.7505	5.6417

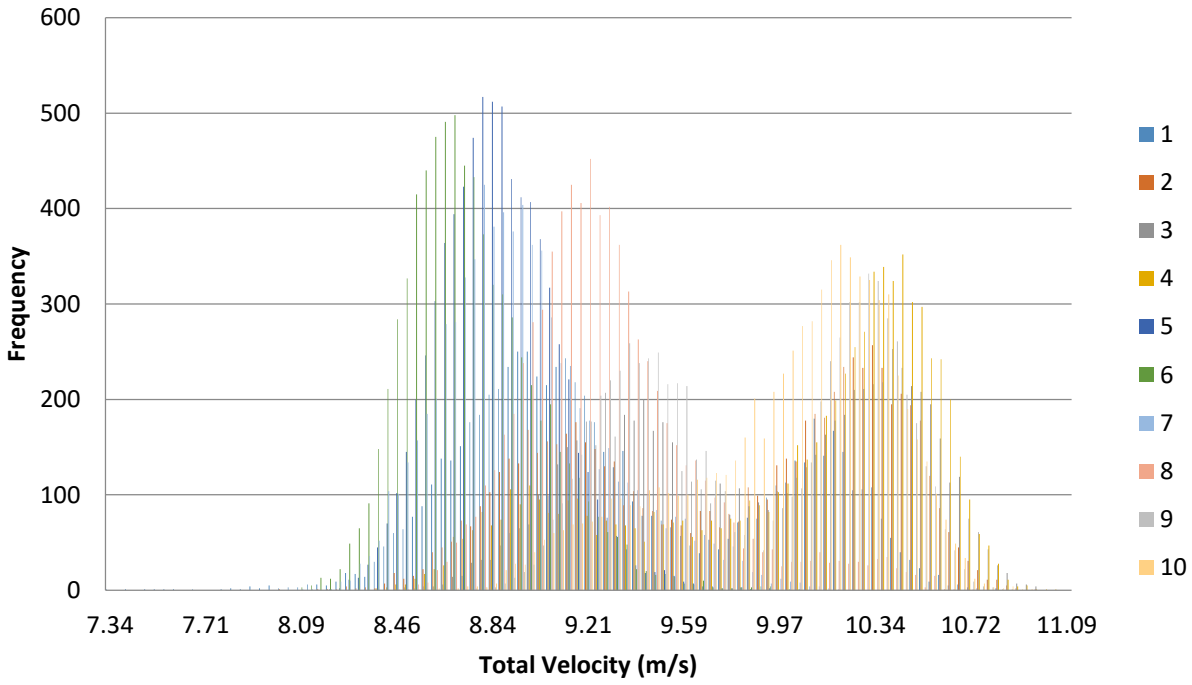


Figure 1. Velocity histogram for each interval (100 bins).

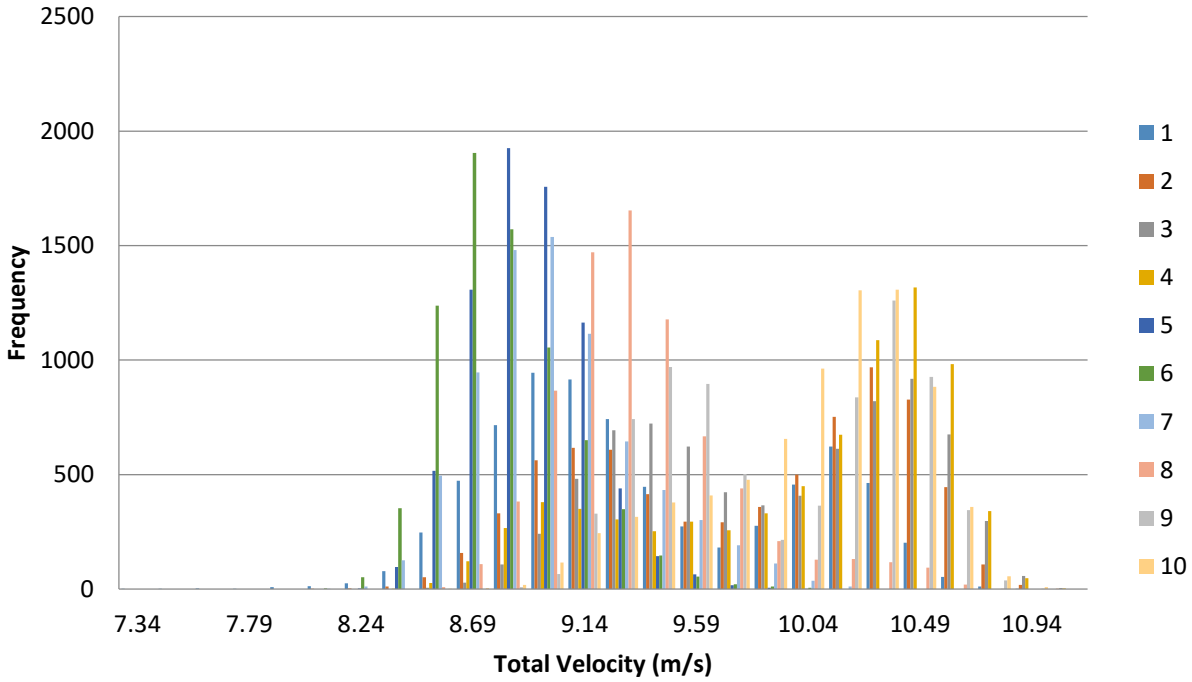
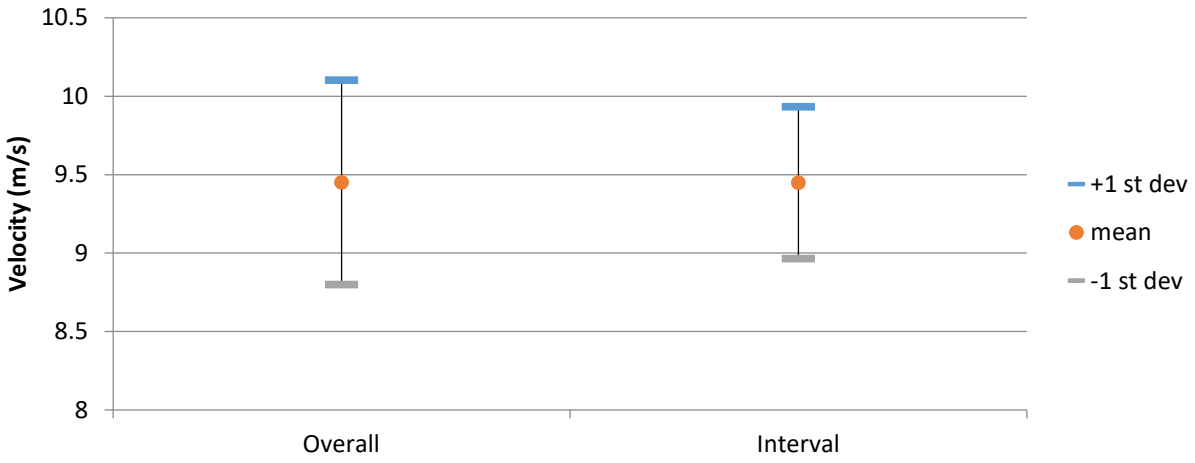
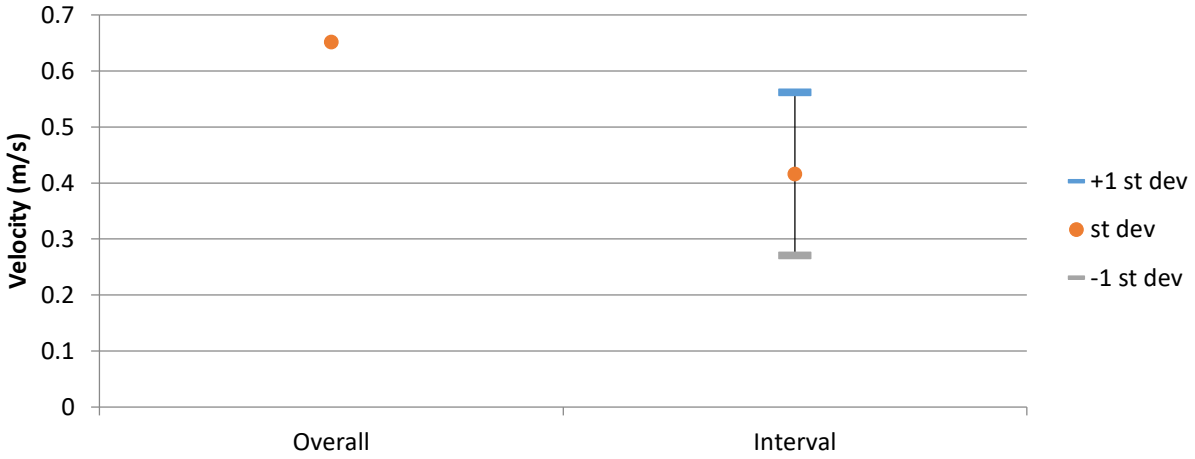


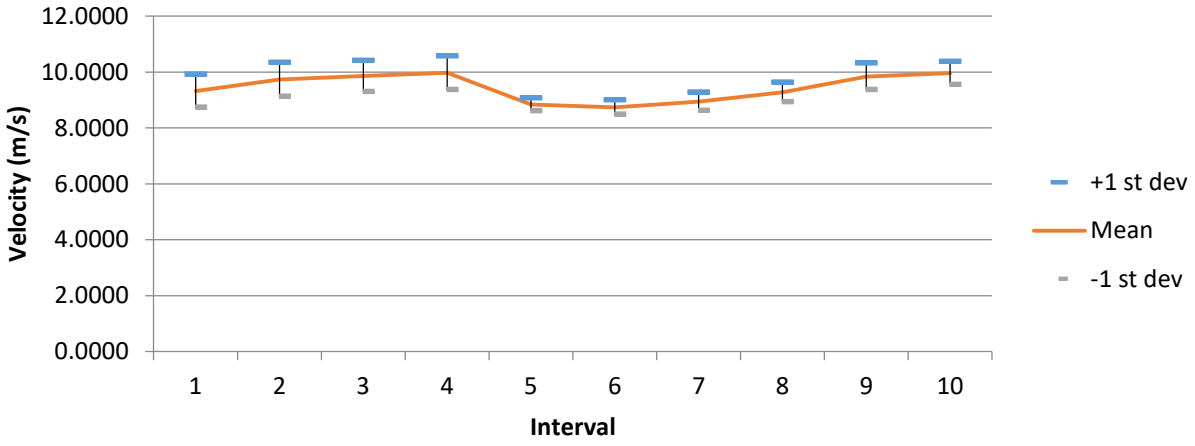
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 61
Blockage Condition: All buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: A4
First Sample Date: 13-Aug-13
First Sample Time: 10:11:57.296

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.5615	5.2678	8.1056	0.3721
u	8.6800	3.9000	6.4356	0.4787
v	-2.1300	-7.0900	-4.7848	0.5662
w	3.9700	-2.5000	0.5249	0.8385

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	9.7058	6.6859	8.0456	0.3369	4.1872	4	0.03 %
2	9.2422	6.6059	7.8089	0.3206	4.1051	7	0.06 %
3	10.3527	5.2678	7.8711	0.3889	4.9412	11	0.09 %
4	9.9378	6.9619	8.1994	0.4384	5.3467	65	0.52 %
5	10.5615	7.0074	8.1446	0.4647	5.7062	173	1.38 %
6	9.3759	6.8951	8.0925	0.2703	3.3397	1	0.01 %
7	9.1154	6.9588	8.1501	0.2536	3.1116	1	0.01 %
8	10.2730	7.3567	8.2201	0.2926	3.5599	14	0.11 %
9	9.6528	7.5615	8.2828	0.2494	3.0111	157	1.26 %
10	10.0466	7.0864	8.2460	0.3202	3.8836	8	0.06 %
		Average	8.1061	0.3336	4.1192		
		St dev	0.1494	0.0713	0.8902		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	6.5888	-4.3480	1.2734	0.4545	0.4466	0.7065	6.8974	6.7784	10.7230
2	6.3144	-4.3870	0.6269	0.4570	0.5613	1.0238	7.2380	8.8890	16.2142
3	6.3111	-4.5533	0.6225	0.5483	0.6111	0.6941	8.6878	9.6830	10.9987
4	6.6522	-4.7199	-0.1245	0.5812	0.5419	0.4968	8.7374	8.1465	7.4685
5	6.3890	-4.9177	0.1309	0.4394	0.6350	0.9669	6.8767	9.9390	15.1339
6	6.5480	-4.5800	1.0667	0.3995	0.3701	0.5242	6.1015	5.6526	8.0056
7	6.3473	-4.9257	1.2258	0.3624	0.2716	0.4801	5.7095	4.2787	7.5635
8	6.4237	-5.0667	0.2314	0.5041	0.4050	0.4990	7.8475	6.3049	7.7682
9	6.2707	-5.3640	0.1157	0.3778	0.3832	0.5185	6.0254	6.1109	8.2684
10	6.5075	-5.0004	0.0569	0.4482	0.3975	0.6212	6.8868	6.1084	9.5456

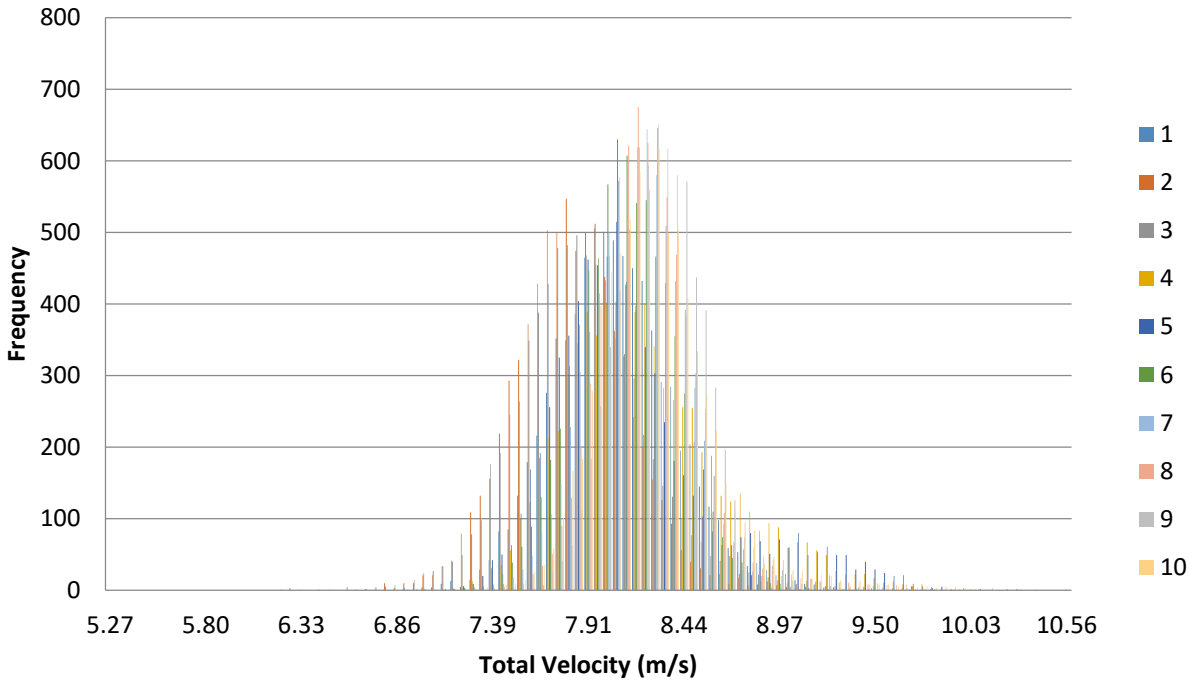


Figure 1. Velocity histogram for each interval (100 bins).

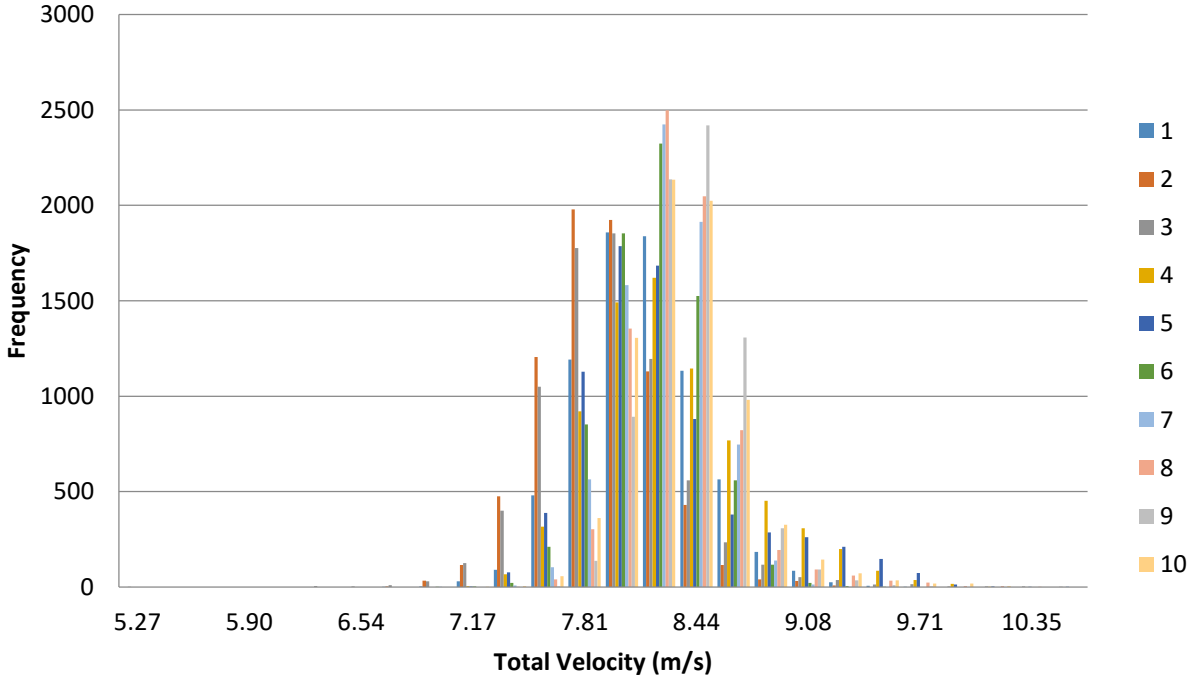
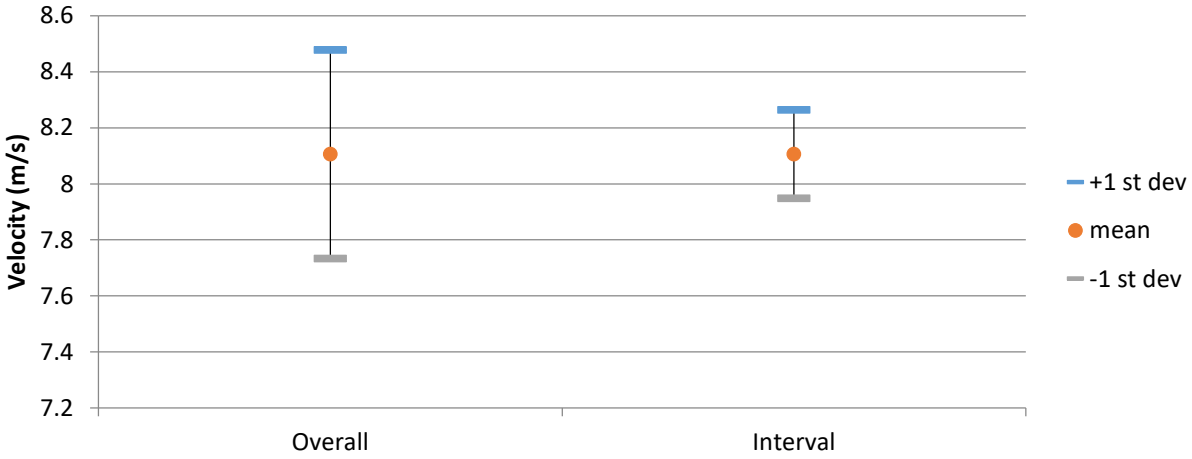
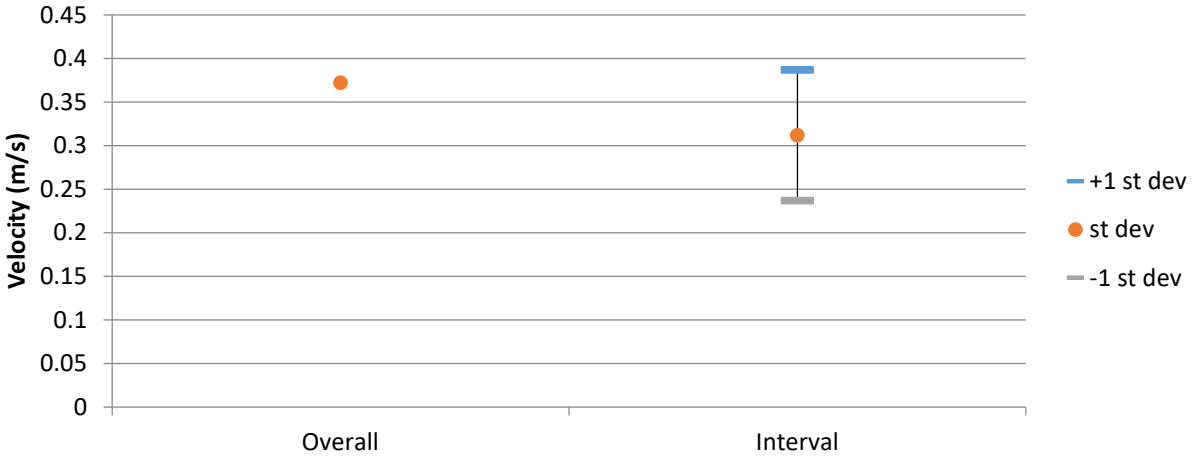


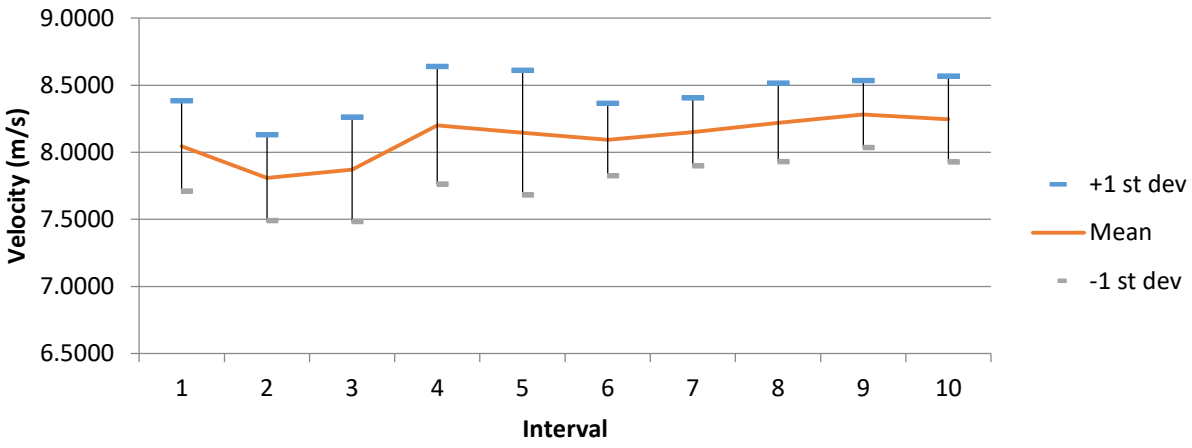
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 62
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: A5
First Sample Date: 13-Aug-13
First Sample Time: 10:13:36.765

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.4084	7.1154	8.5961	0.2664
u	8.3400	4.8100	6.1685	0.3435
v	-2.6000	-7.5500	-5.9454	0.4125
w	2.5200	-2.0100	0.1578	0.5036

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	10.1423	7.1154	8.4557	0.2715	3.2107	512	4.10 %
2	9.7551	7.6745	8.4319	0.2113	2.5062	257	2.06 %
3	9.6678	7.4877	8.4217	0.2321	2.7565	12	0.10 %
4	9.4229	7.7896	8.6357	0.2187	2.5326	94	0.75 %
5	9.7449	7.7512	8.5873	0.1490	1.7353	1715	13.72 %
6	10.0435	7.5081	8.6838	0.2777	3.1984	259	2.07 %
7	9.5534	7.9861	8.7748	0.2164	2.4662	2393	19.14 %
8	10.4084	8.4385	8.9106	0.1988	2.2309	4177	33.42 %
9	9.9241	8.1893	8.7100	0.1851	2.1249	1609	12.87 %
10	10.2578	7.6297	8.5922	0.2536	2.9511	957	7.66 %
		Average	8.6204	0.2214	2.5713		
		St dev	0.1498	0.0375	0.4485		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	6.1971	-5.6650	0.3972	0.5194	0.5491	0.5904	8.3820	8.8603	9.5276
2	6.0635	-5.8331	0.0876	0.2774	0.2748	0.4365	4.5750	4.5324	7.1994
3	6.3048	-5.5302	0.3076	0.3650	0.3431	0.5466	5.7900	5.4418	8.6694
4	6.3451	-5.8191	0.4099	0.3433	0.2609	0.3827	5.4100	4.1121	6.0316
5	5.9673	-6.1652	-0.0234	0.1824	0.1933	0.2718	3.0571	3.2396	4.5556
6	6.3202	-5.9108	0.0919	0.3412	0.2869	0.6286	5.3987	4.5389	9.9455
7	6.1102	-6.2739	0.2632	0.2315	0.2408	0.4083	3.7893	3.9408	6.6820
8	6.0969	-6.4865	0.0180	0.1770	0.1692	0.3611	2.9023	2.7754	5.9225
9	6.0470	-6.2540	-0.1437	0.1989	0.2061	0.3424	3.2887	3.4075	5.6628
10	6.0991	-6.0227	0.0160	0.2674	0.3432	0.4779	4.3842	5.6277	7.8362

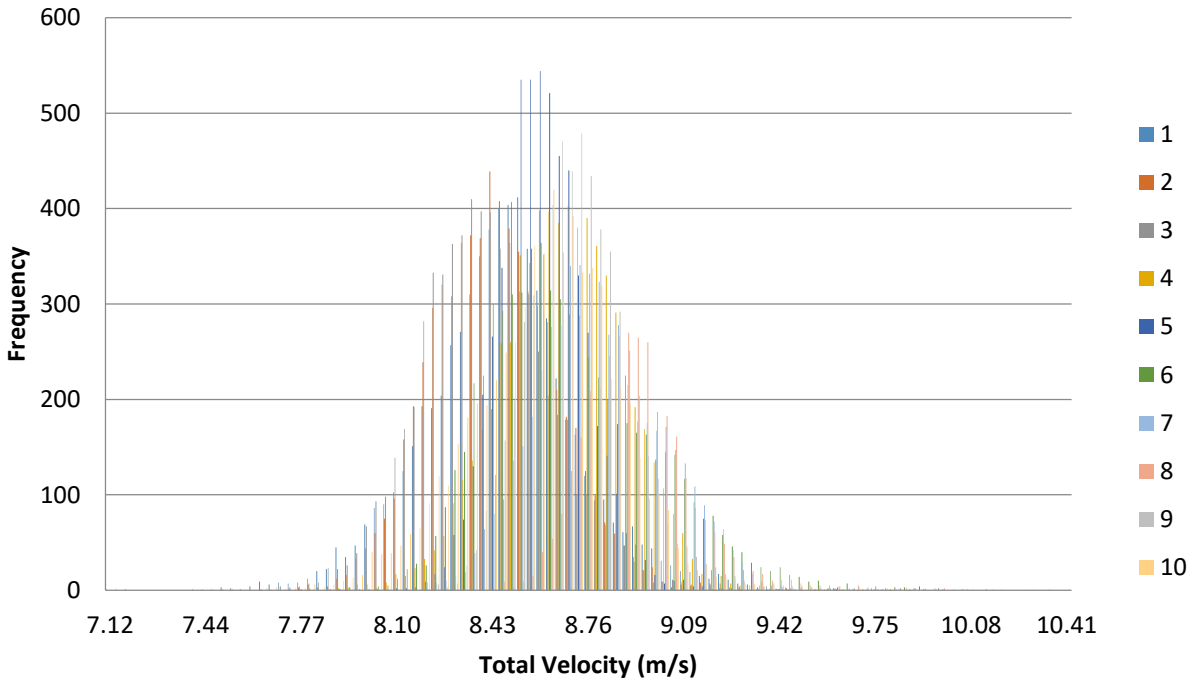


Figure 1. Velocity histogram for each interval (100 bins).

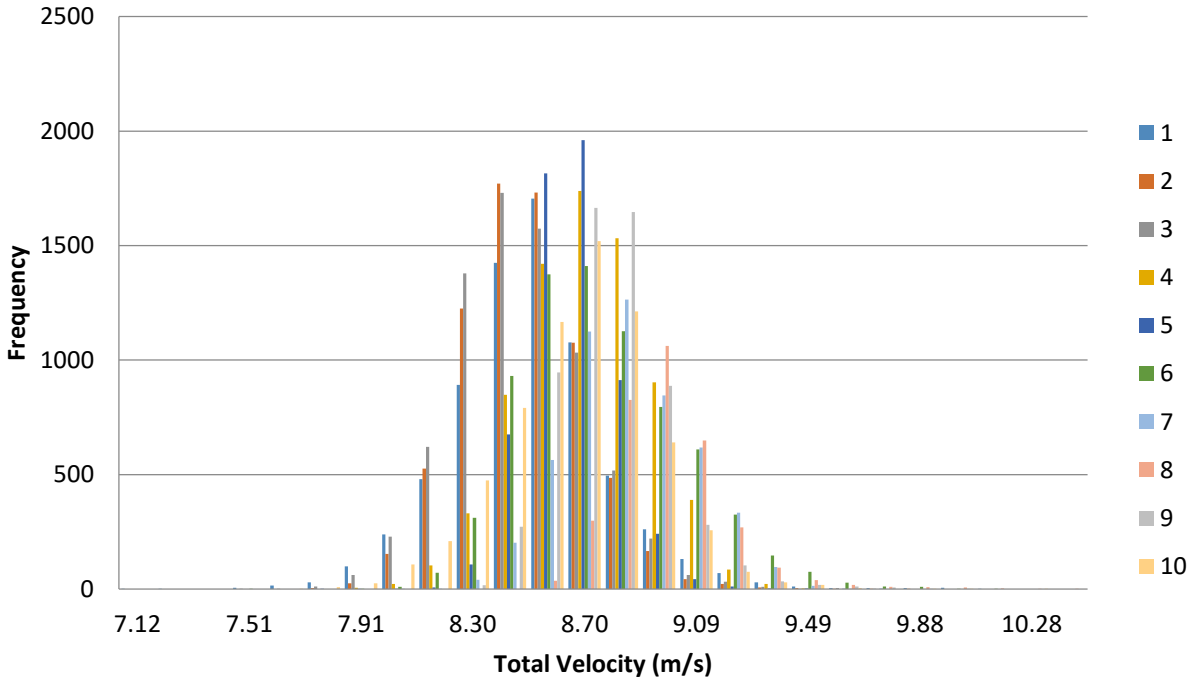
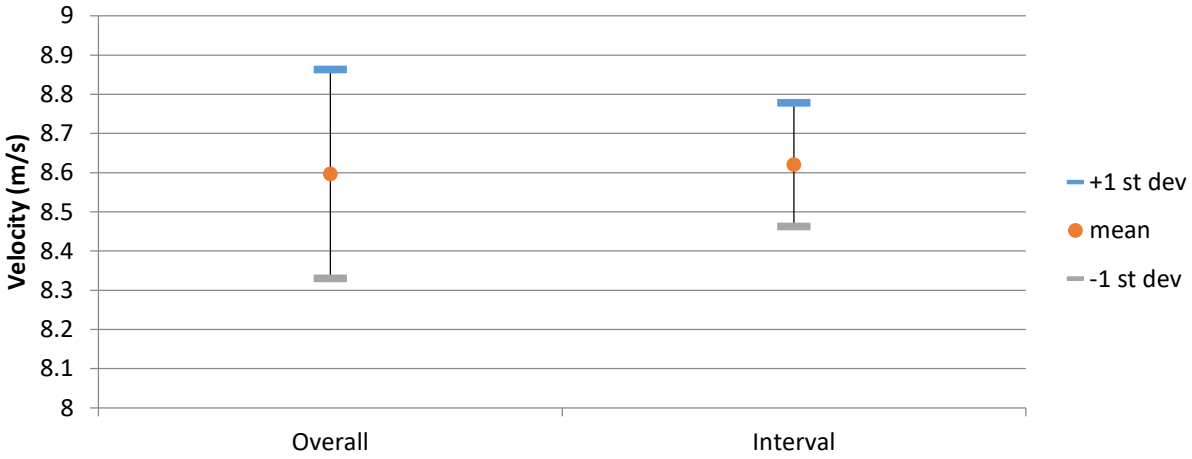
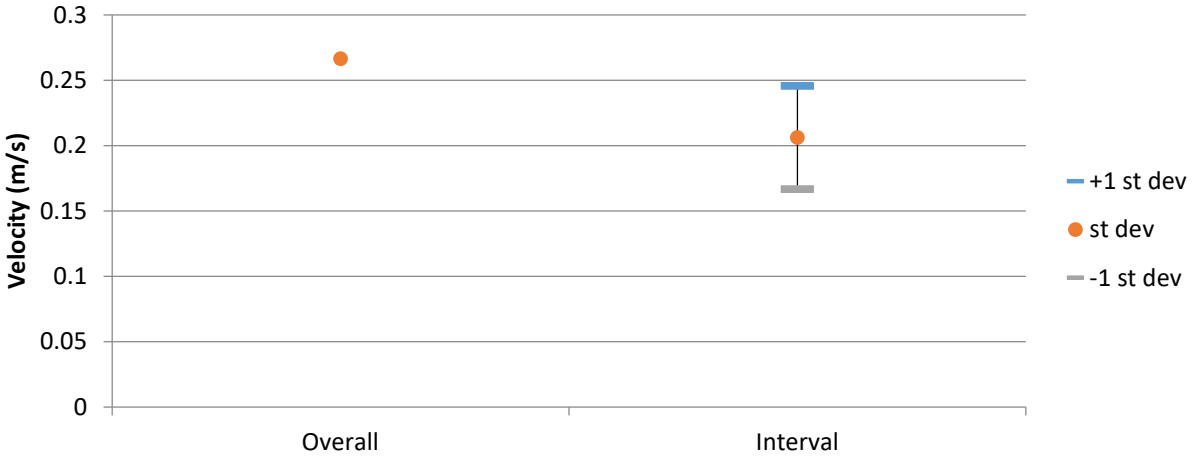


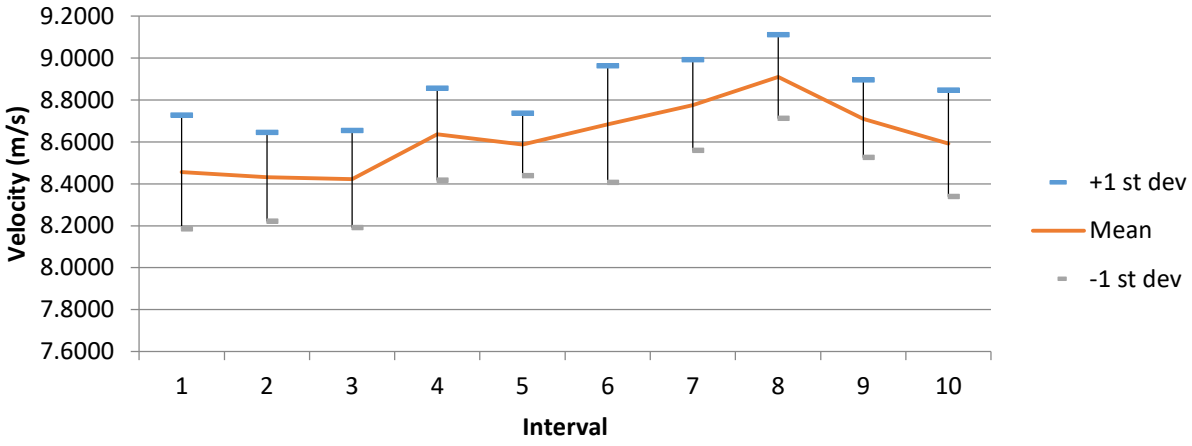
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 63
Blockage Condition: All buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: A3
First Sample Date: 13-Aug-13
First Sample Time: 10:15:15.625

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.3722	6.7969	9.3362	0.7540
u	9.0700	4.6400	6.8874	0.6289
v	-3.0500	-7.5700	-6.0848	0.5911
w	1.8500	-3.5000	-1.3842	0.7814

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	10.8171	7.3559	8.8531	0.6049	6.8324	2	0.02 %
2	10.5085	7.1797	8.4238	0.4558	5.4106	38	0.30 %
3	10.9921	6.7969	8.9972	0.6676	7.4199	1344	10.75 %
4	10.9274	7.5779	8.9495	0.5745	6.4192	98	0.78 %
5	11.3541	8.0481	9.6795	0.6206	6.4114	113	0.90 %
6	11.3540	8.0461	9.9163	0.5528	5.5744	3	0.02 %
7	11.3722	8.1048	9.6024	0.5617	5.8494	1	0.01 %
8	11.0656	8.1616	9.7493	0.5040	5.1698	0	0.00 %
9	11.1727	7.3253	9.8556	0.5604	5.6858	56	0.45 %
10	10.8253	7.0257	9.2726	0.6771	7.3024	121	0.97 %
		Average	9.3299	0.5779	6.2075		
		St dev	0.4796	0.0648	0.7523		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	6.8936	-5.3713	-1.2067	0.5418	0.5395	0.5733	7.8599	7.8261	8.3162
2	6.4510	-5.2986	-0.2050	0.5115	0.5216	0.9493	7.9290	8.0860	14.7159
3	6.4960	-5.8877	-1.7948	0.6579	0.4857	0.8018	10.1274	7.4763	12.3423
4	6.3827	-6.1919	-0.8175	0.5086	0.3400	0.5510	7.9691	5.3270	8.6324
5	6.9683	-6.5564	-1.3433	0.5484	0.3716	0.5398	7.8695	5.3329	7.7461
6	7.3482	-6.4536	-1.5572	0.4971	0.3223	0.4666	6.7654	4.3867	6.3493
7	7.0581	-6.3583	-1.3195	0.4859	0.3156	0.4471	6.8849	4.4714	6.3339
8	7.1377	-6.4574	-1.4891	0.4645	0.2722	0.3887	6.5070	3.8135	5.4456
9	7.2055	-6.3827	-2.0728	0.5408	0.3473	0.2830	7.5049	4.8198	3.9271
10	6.8568	-5.8580	-2.1132	0.6640	0.3702	0.2547	9.6839	5.3989	3.7148

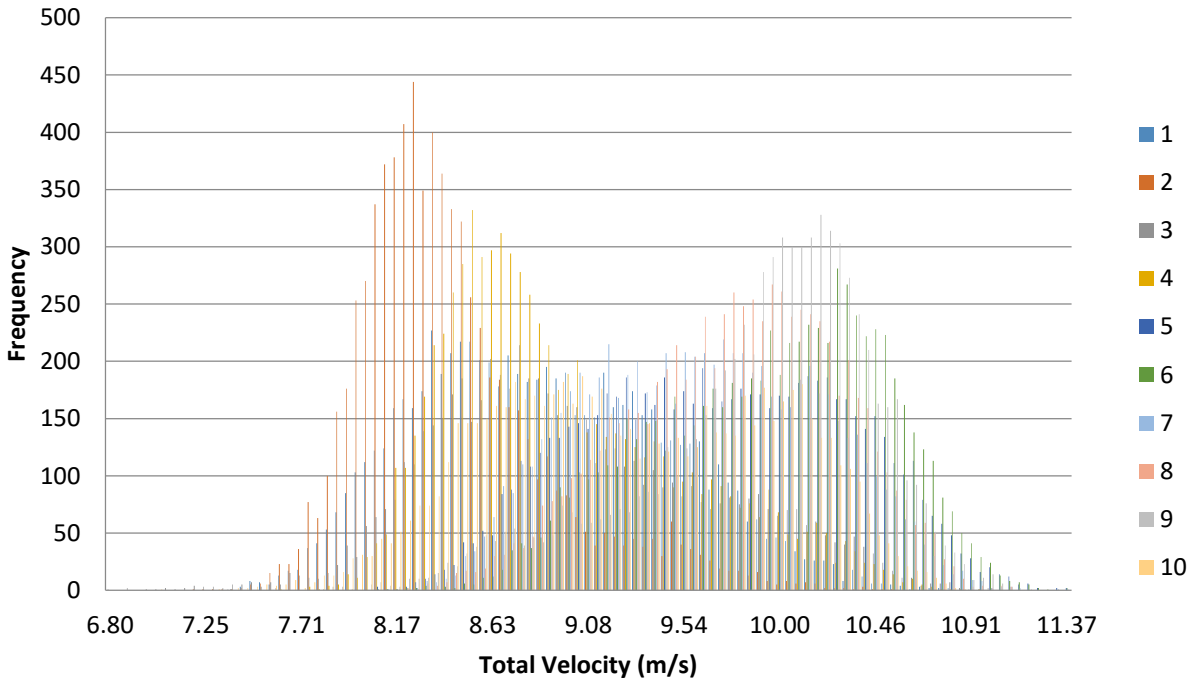


Figure 1. Velocity histogram for each interval (100 bins).

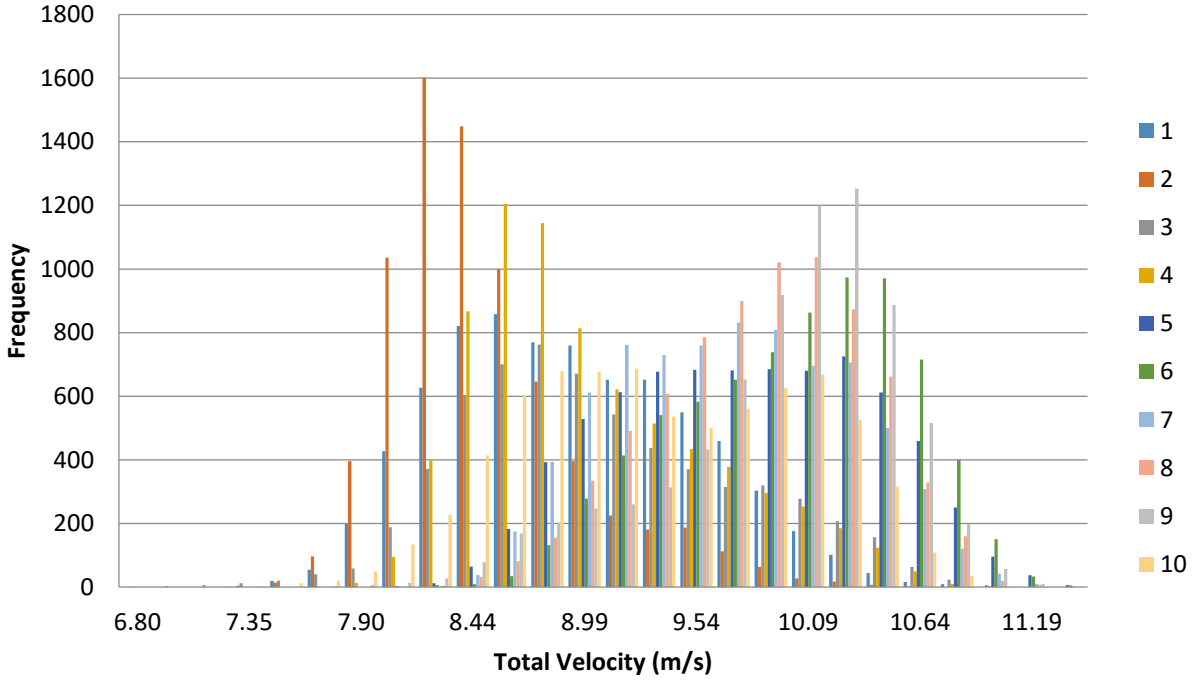
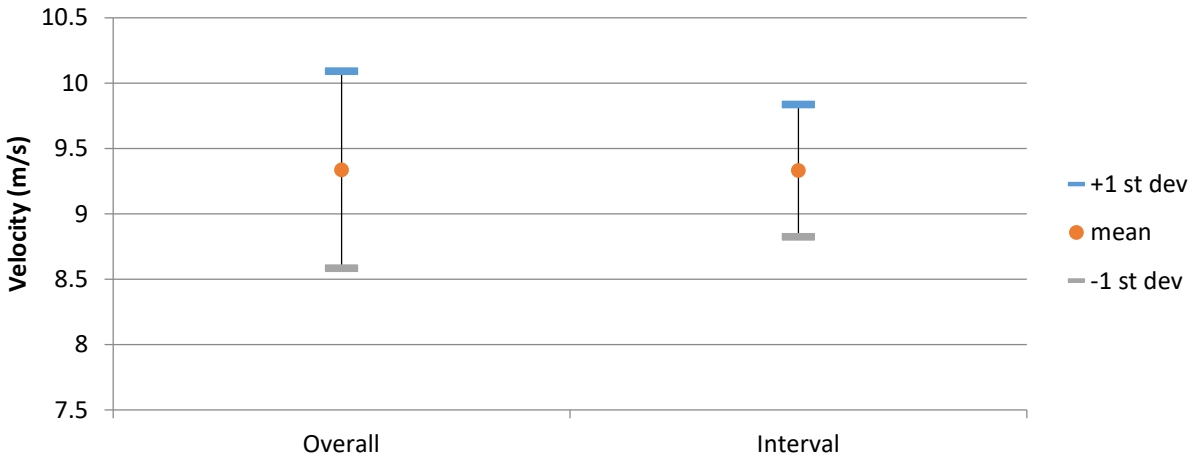
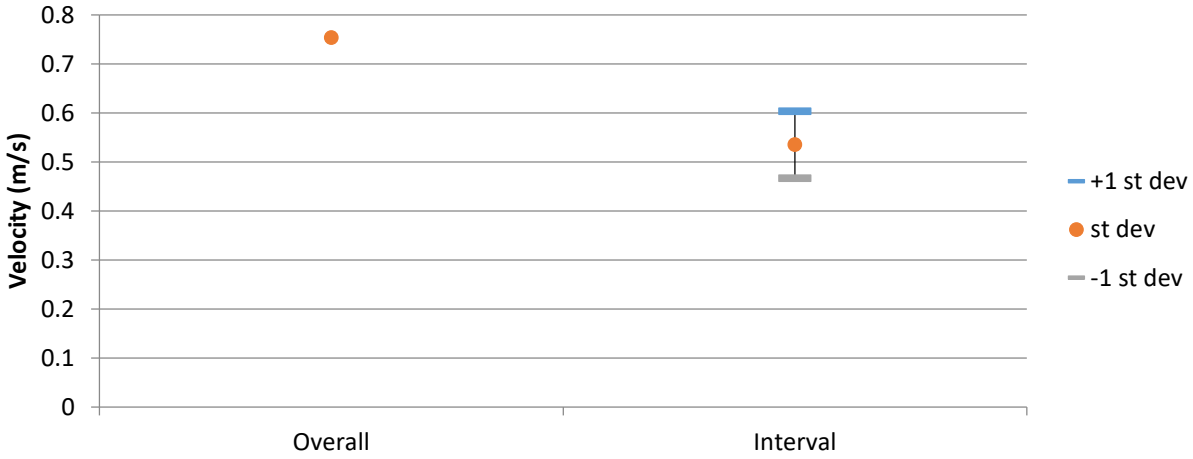


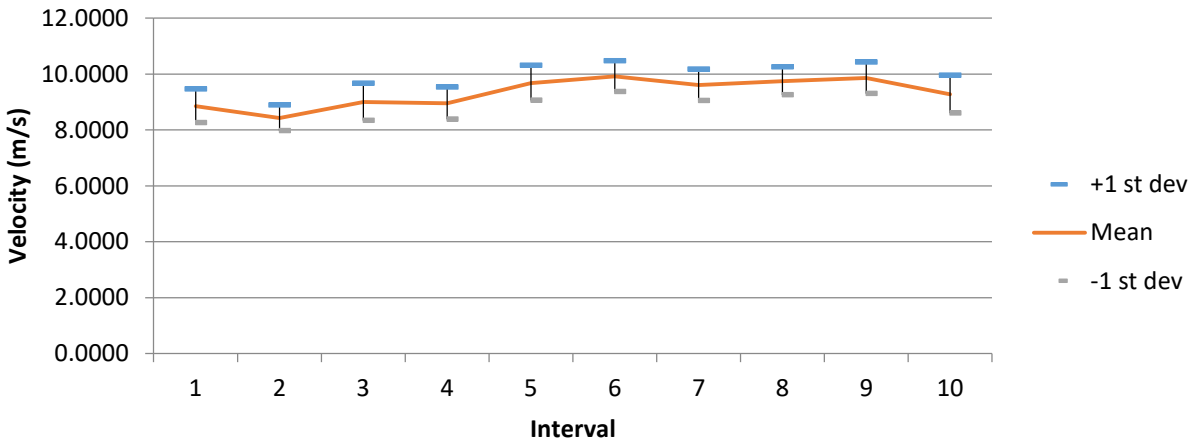
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 64
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 13-Aug-13
First Sample Time: 10:17:13.843

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.7860	9.3479	10.9580	0.1684
u	11.5000	9.1400	10.6514	0.1717
v	1.2800	-2.4800	-0.6883	0.4952
w	0.2850	-4.1700	-2.3732	0.5214

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.7860	10.3388	11.0196	0.1863	1.3959
2	11.5358	10.3698	10.9849	0.1533	1.3960
3	11.5789	10.4083	10.9635	0.1530	1.4250
4	11.5820	10.3565	10.9724	0.1564	1.5104
5	11.5474	9.3479	10.9032	0.1647	1.4733
6	11.6554	10.1141	10.9288	0.1610	1.5205
7	11.5274	10.0730	10.8952	0.1657	1.6211
8	11.6065	10.2911	10.9424	0.1774	1.4107
9	11.5677	10.3929	10.9910	0.1551	1.5031
10	11.6210	10.3815	10.9786	0.1650	1.4946
		Average	10.9579	0.1638	1.4751
		St Dev	0.0399	0.0108	0.0671

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.5915	-1.2992	-2.6700	0.1637	0.4042	0.5278	1.5455	3.8160	4.9833
2	10.6619	-0.6875	-2.5030	0.1578	0.4175	0.2766	1.4800	3.9157	2.5941
3	10.6684	-0.1076	-2.4781	0.1545	0.3716	0.3047	1.4485	3.4827	2.8559
4	10.5838	-0.9932	-2.6879	0.1528	0.3171	0.2547	1.4442	2.9958	2.4062
5	10.5670	-0.5888	-2.5731	0.1595	0.3824	0.3267	1.5095	3.6189	3.0920
6	10.6175	-0.6131	-2.4617	0.1737	0.3663	0.3659	1.6357	3.4499	3.4463
7	10.7248	-0.7182	-1.6799	0.1683	0.3454	0.4737	1.5690	3.2201	4.4170
8	10.7256	-0.9691	-1.7567	0.1879	0.5938	0.5612	1.7522	5.5364	5.2326
9	10.6841	-0.4811	-2.5000	0.1500	0.2345	0.3427	1.4039	2.1953	3.2073
10	10.6894	-0.4250	-2.4216	0.1548	0.2409	0.4078	1.4486	2.2540	3.8153

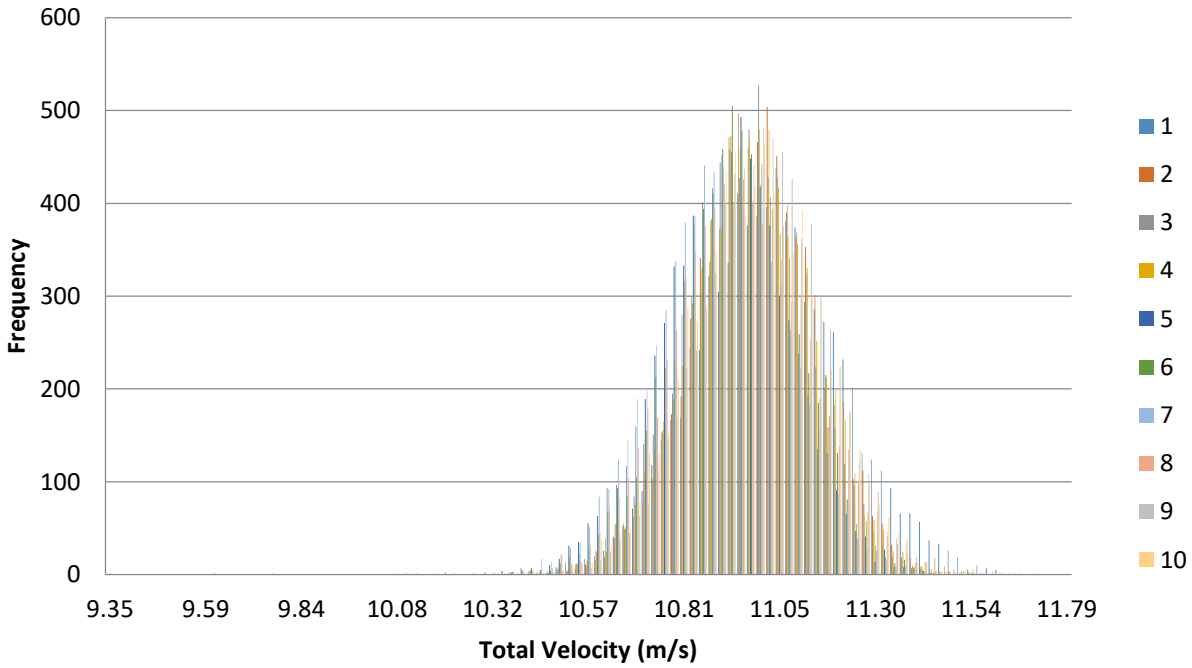


Figure 1. Velocity histogram for each interval (100 bins).

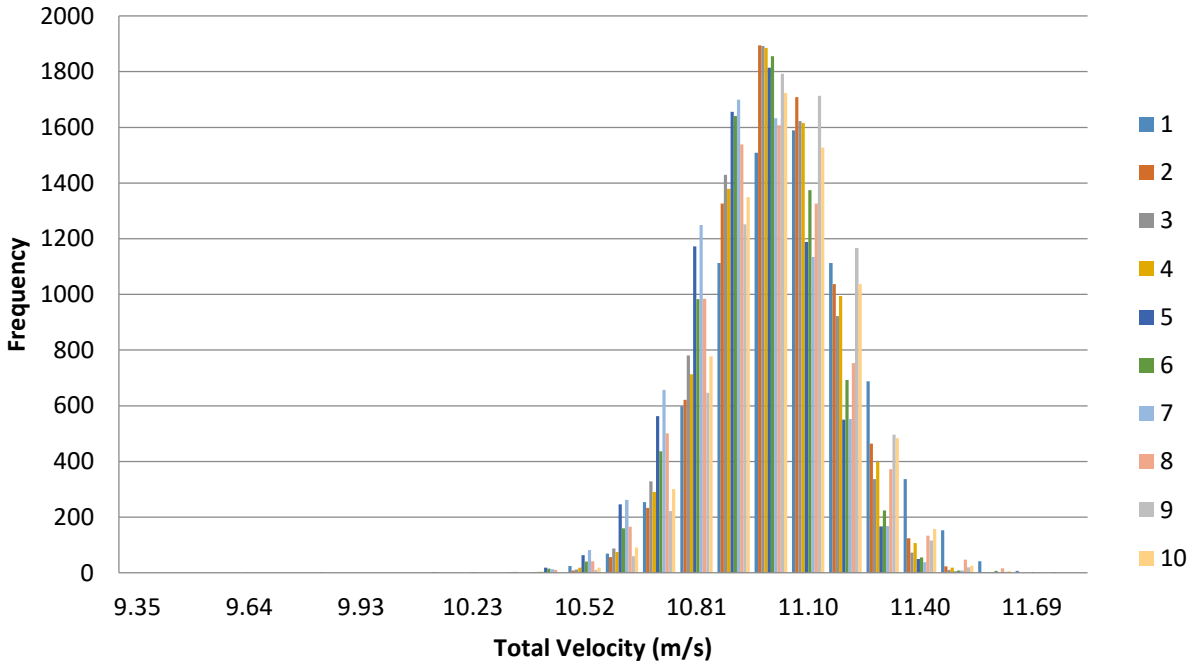
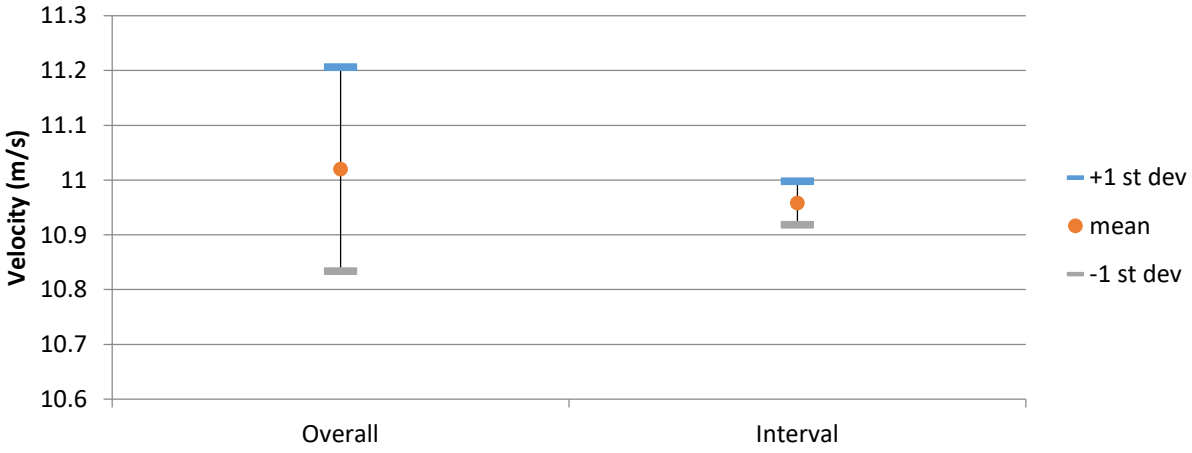
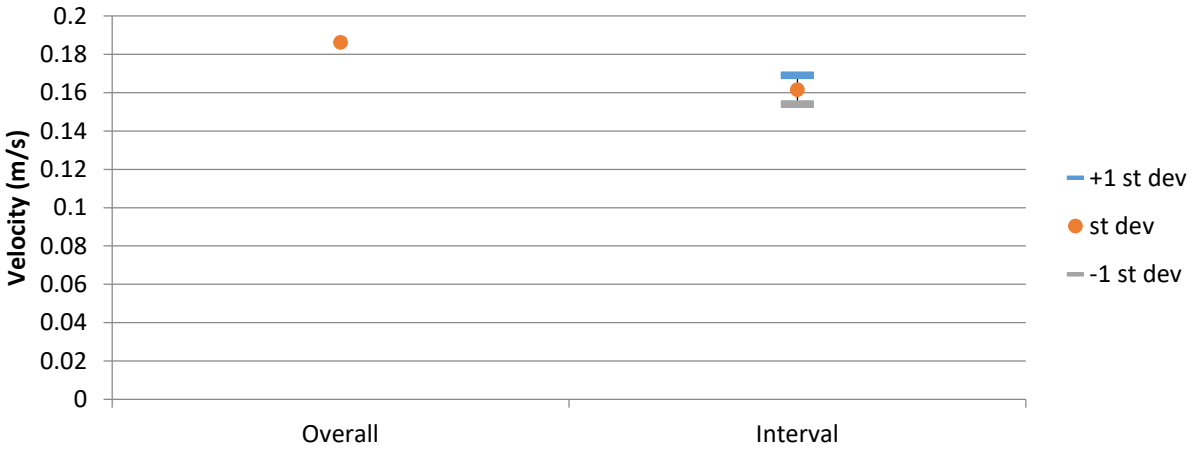


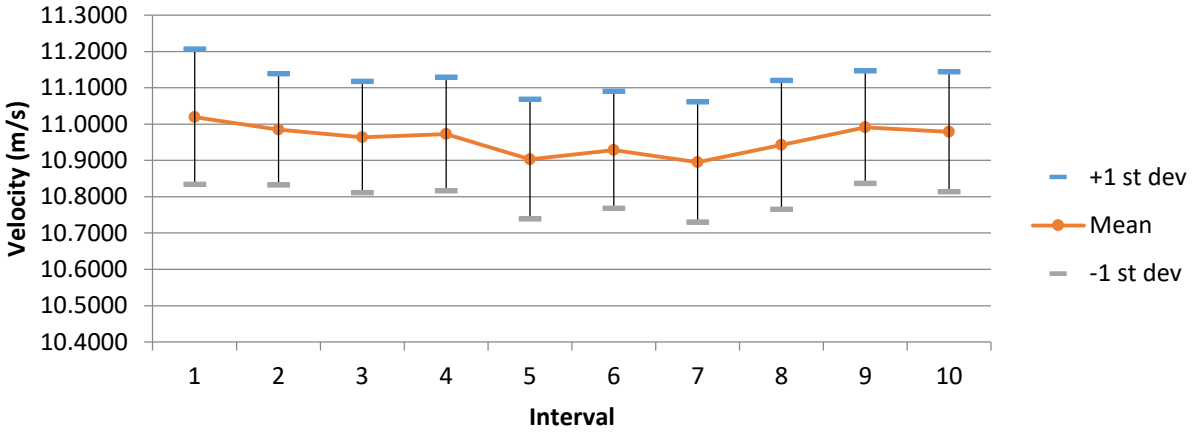
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 65
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: F3
First Sample Date: 13-Aug-13
First Sample Time: 10:19:34.359

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.7024	9.7470	10.7914	0.3618
u	12.0000	8.4500	10.1430	0.4591
v	5.6100	-2.7400	1.0587	1.0910
w	0.1070	-5.8700	-3.2390	0.8309

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.5569	10.1465	10.8916	0.2114	4.8886
2	12.7024	10.2549	11.3736	0.5560	2.5550
3	12.2299	10.2227	11.0872	0.2833	2.3524
4	11.5398	10.0660	10.8047	0.2542	1.7091
5	11.2245	9.9629	10.5386	0.1801	1.8271
6	11.4623	9.7470	10.6473	0.1945	2.0500
7	11.4582	9.9959	10.6279	0.2179	1.7023
8	11.4382	10.1065	10.7309	0.1827	1.2527
9	11.1326	10.1891	10.6231	0.1331	1.3606
10	11.0547	9.8813	10.5888	0.1441	2.1843
		Average	10.7914	0.2357	2.1882
		St Dev	0.2627	0.1214	0.9813

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.1400	2.3088	-3.1061	0.2791	0.6164	0.6450	2.7525	6.0794	6.3611
2	10.5668	1.3660	-3.3764	0.7903	1.7070	1.0985	7.4787	16.1539	10.3953
3	10.5467	0.0346	-3.1545	0.4072	0.7788	1.0241	3.8609	7.3844	9.7098
4	10.0546	-0.5452	-3.6303	0.5828	0.6802	1.1974	5.7966	6.7653	11.9089
5	9.7777	0.7741	-3.7936	0.3445	0.3115	0.5340	3.5232	3.1853	5.4616
6	10.0204	0.8557	-3.4401	0.2486	0.4559	0.3975	2.4807	4.5498	3.9664
7	9.9228	1.0044	-3.5938	0.2794	0.6509	0.3367	2.8157	6.5598	3.3930
8	10.0558	1.5275	-3.3590	0.1960	0.5979	0.2346	1.9494	5.9457	2.3327
9	10.1526	1.5640	-2.6855	0.1477	0.2048	0.2632	1.4551	2.0173	2.5928
10	10.1929	1.6967	-2.2509	0.1533	0.3560	0.3885	1.5039	3.4931	3.8114

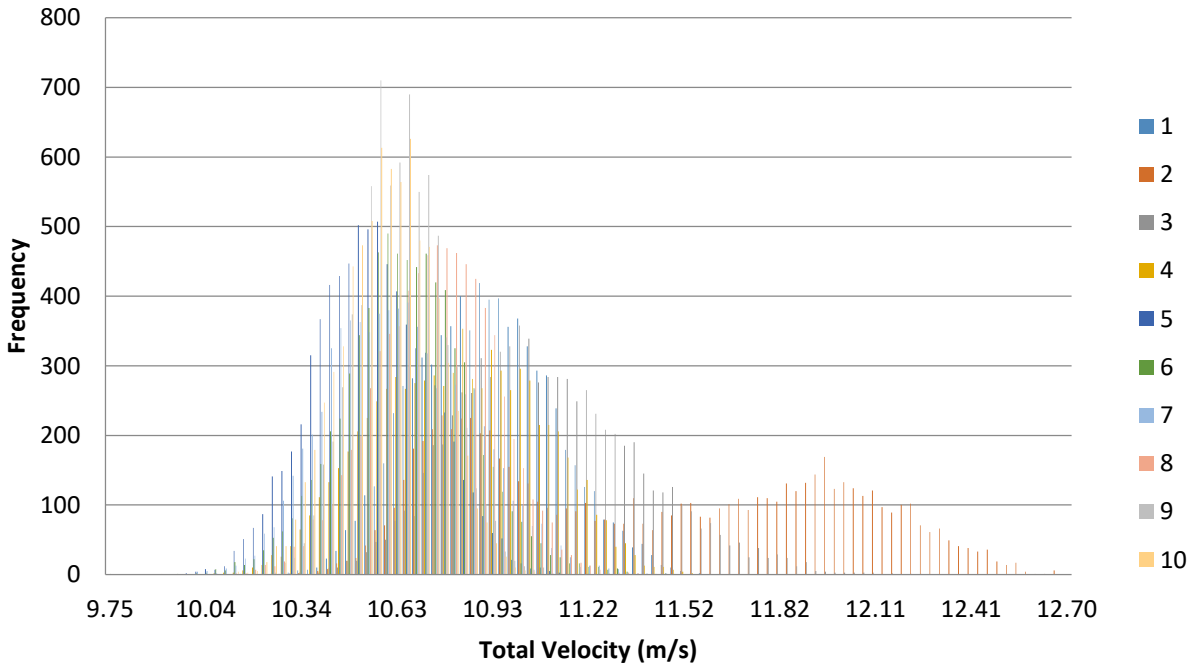


Figure 1. Velocity histogram for each interval (100 bins).

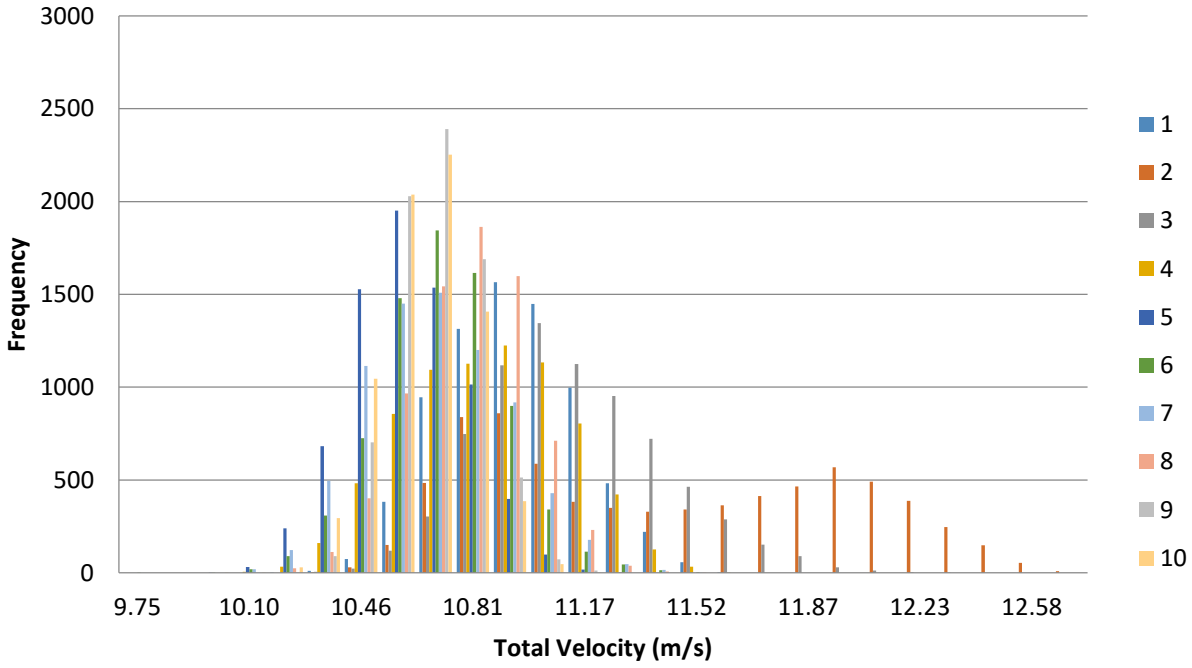
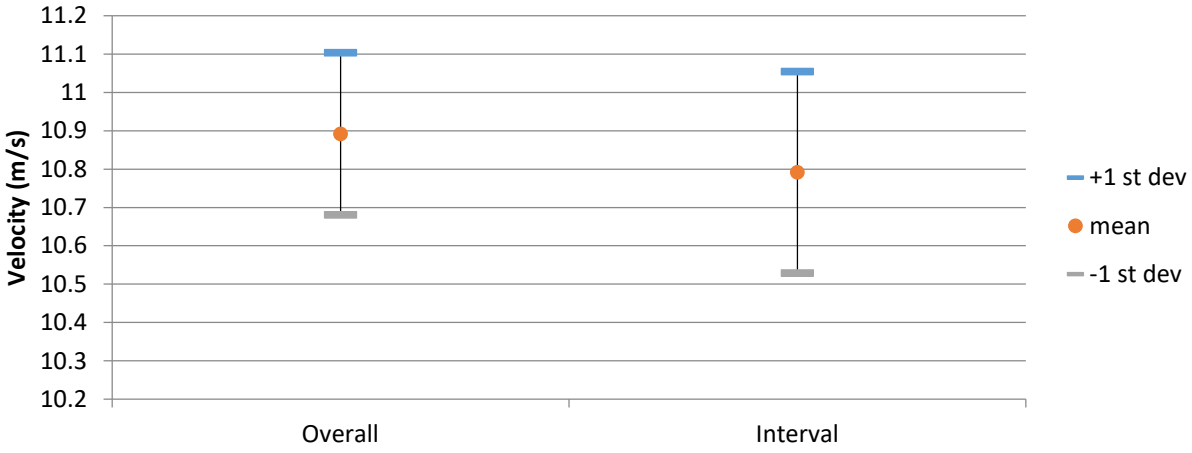
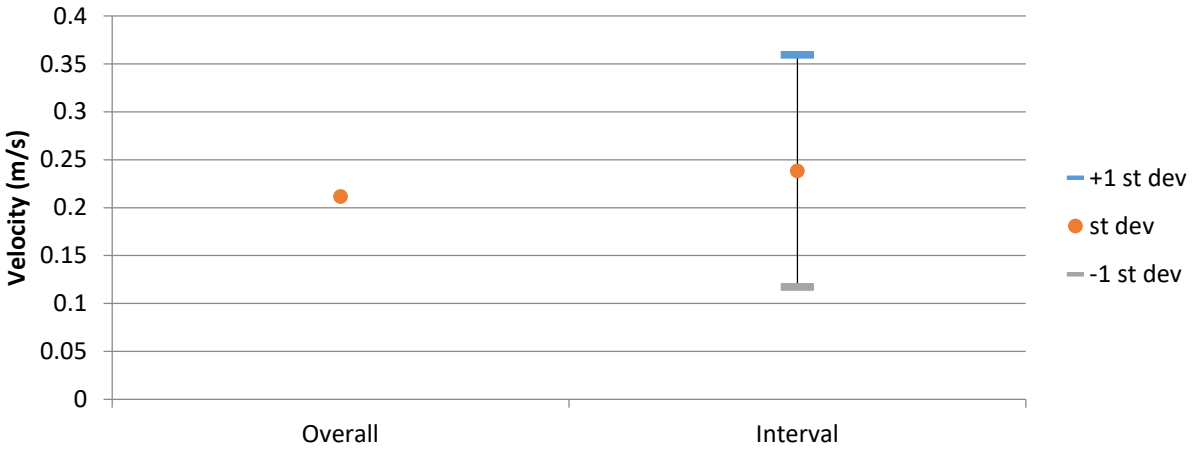


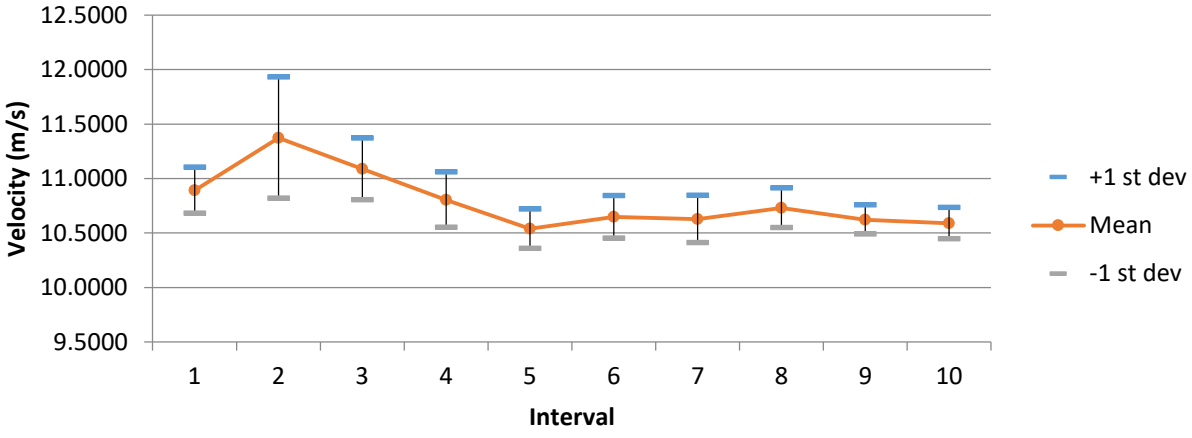
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 66
Blockage Condition: All buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: H3
First Sample Date: 13-Aug-13
First Sample Time: 10:21:50.421

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.7848	7.8837	9.9666	0.5355
u	9.5500	5.9000	7.6444	0.4900
v	8.7800	2.2400	5.6508	0.9180
w	0.2780	-5.7400	-2.7966	0.5896

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	12.2146	8.3194	10.0996	0.5079	5.0286	201	1.61 %
2	12.7848	8.3189	10.1224	0.6542	6.4629	22	0.18 %
3	12.3695	8.3082	9.7192	0.5207	5.3571	22	0.18 %
4	12.2093	8.2466	10.0696	0.5044	5.0093	212	1.70 %
5	11.6082	8.2607	10.0930	0.4706	4.6621	351	2.81 %
6	11.7006	8.4137	10.0771	0.4601	4.5657	28	0.22 %
7	11.3555	7.9654	9.8685	0.4335	4.3925	83	0.66 %
8	12.0166	8.3565	9.9580	0.4416	4.4350	70	0.56 %
9	11.2175	8.2353	9.7313	0.4812	4.9452	7	0.06 %
10	11.6101	7.8837	9.9382	0.6298	6.3371	47	0.38 %
		Average	9.9677	0.5104	5.1196		
		St dev	0.1442	0.0712	0.7005		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	7.8696	5.6524	-2.6104	0.5287	0.9566	0.6093	6.7186	12.1555	7.7425
2	8.1731	5.4838	-2.1490	0.3004	0.9618	0.6208	3.6756	11.7678	7.5962
3	7.8525	4.9512	-2.6591	0.3903	1.0240	0.5349	4.9701	13.0403	6.8113
4	7.4607	6.0388	-2.9231	0.4106	0.8183	0.3715	5.5032	10.9677	4.9798
5	7.3526	6.1689	-3.0251	0.4327	0.6882	0.4036	5.8851	9.3603	5.4898
6	7.6722	5.7469	-2.9898	0.3812	0.7873	0.4091	4.9691	10.2613	5.3328
7	7.6345	5.4018	-2.9445	0.4527	0.8971	0.6573	5.9291	11.7506	8.6095
8	7.4318	6.0271	-2.6655	0.3682	0.6530	0.3633	4.9538	8.7867	4.8882
9	7.4160	5.4650	-3.0489	0.2949	0.7588	0.3295	3.9764	10.2313	4.4431
10	7.5677	5.6057	-2.9597	0.5967	0.8825	0.7589	7.8844	11.6615	10.0276

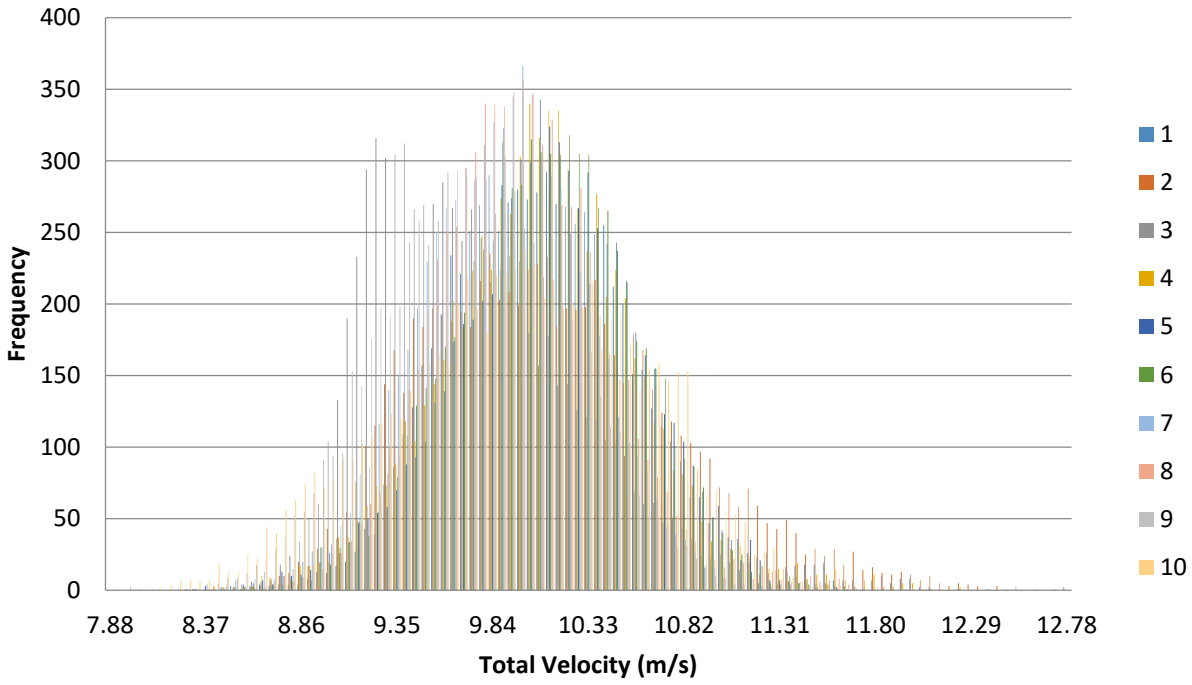


Figure 1. Velocity histogram for each interval (100 bins).

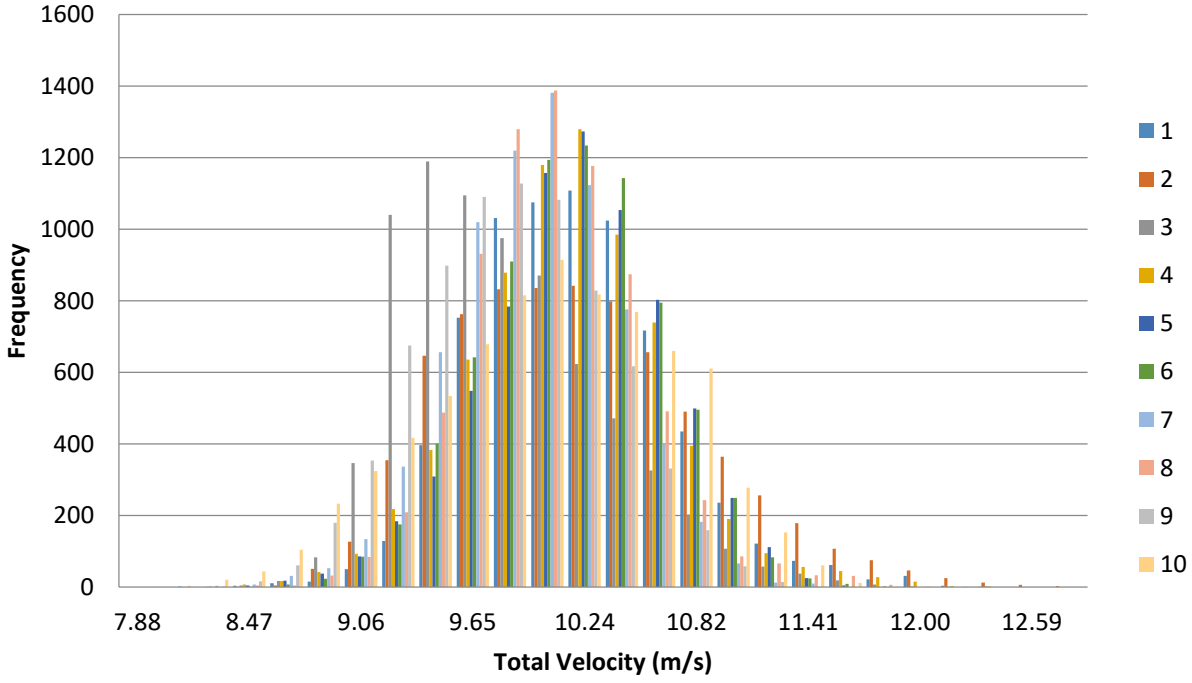
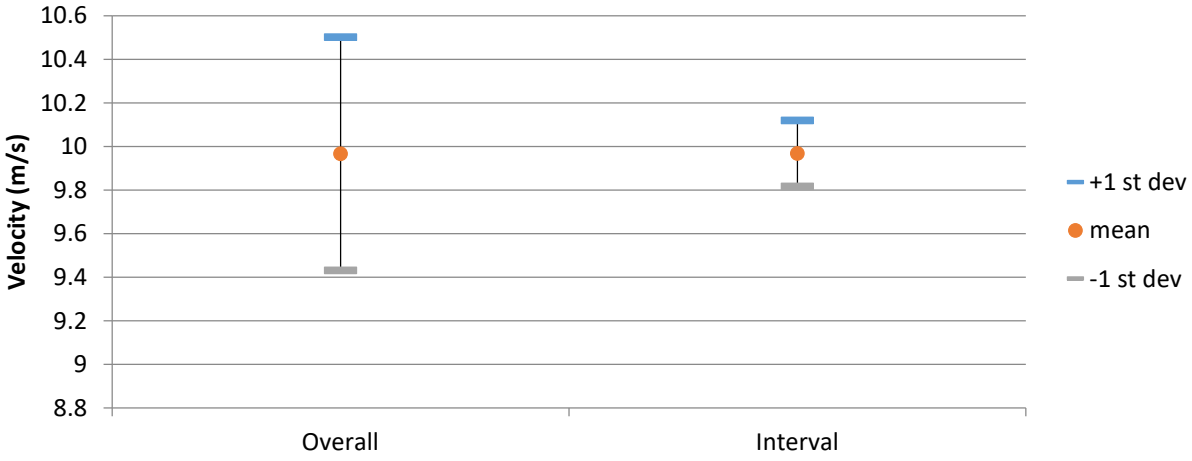
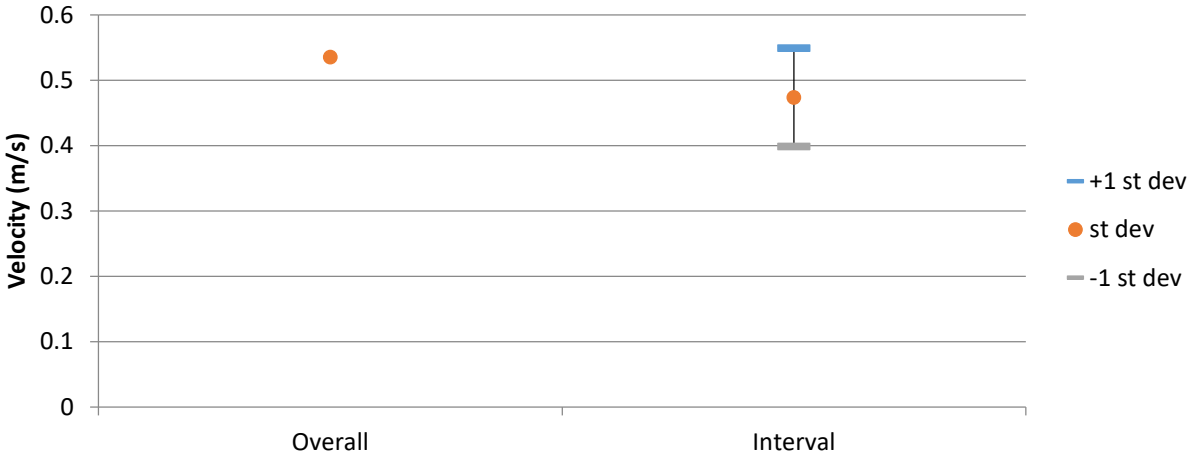


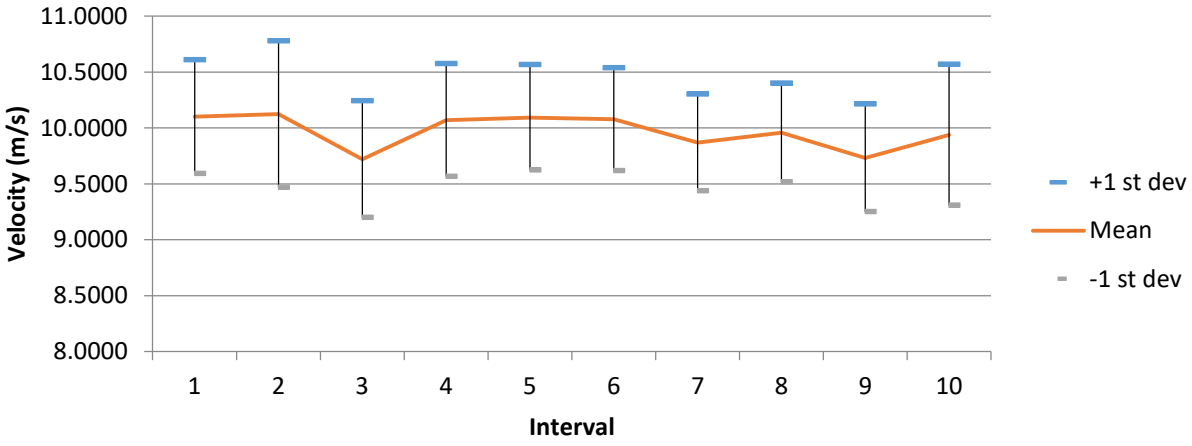
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 67
Blockage Condition: All buildings
Blower Frequency: 50 Hz
Inlet Probe Location: G3
First Sample Date: 13-Aug-13
First Sample Time: 10:23:55.000

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.4777	9.2249	10.2774	0.2864
u	10.3000	7.9800	9.1032	0.2664
v	7.3700	1.4100	3.7423	0.6894
w	-0.5010	-4.6200	-2.8434	0.4486

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	12.2201	9.8326	10.5371	0.2712	2.7881
2	12.4777	9.3193	10.2813	0.2867	1.8479
3	11.8412	9.5633	10.1841	0.1882	1.7912
4	11.4605	9.6291	10.3014	0.1845	2.9191
5	12.1959	9.6711	10.2496	0.2992	3.1496
6	11.8096	9.2249	10.2004	0.3213	2.3394
7	11.0008	9.3825	9.9883	0.2337	1.6633
8	11.2432	9.7638	10.3445	0.1721	2.3376
9	11.8648	9.7742	10.4179	0.2435	2.5336
10	11.9729	9.5934	10.2693	0.2602	2.3941
		Average	10.2774	0.2461	2.3764
		St Dev	0.1458	0.0514	0.4712

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.3230	4.0999	-2.6049	0.2100	0.5947	0.4404	2.2530	6.3786	4.7235
2	9.2089	3.5266	-2.6866	0.3444	0.8229	0.7302	3.7396	8.9364	7.9296
3	9.0593	3.5996	-2.8992	0.2145	0.4711	0.2215	2.3675	5.2005	2.4453
4	9.1207	4.0049	-2.5392	0.1423	0.5190	0.4347	1.5606	5.6899	4.7660
5	8.9878	3.8606	-2.9605	0.2545	0.7123	0.3499	2.8311	7.9250	3.8928
6	9.0623	3.5630	-2.9164	0.2272	0.8378	0.2675	2.5068	9.2444	2.9519
7	8.8587	3.2583	-3.1907	0.2532	0.6117	0.3285	2.8579	6.9055	3.7078
8	9.1842	3.9147	-2.6494	0.1530	0.4436	0.3525	1.6654	4.8305	3.8381
9	9.1088	3.9570	-3.0941	0.2308	0.5202	0.2558	2.5341	5.7105	2.8088
10	9.1188	3.6382	-2.8936	0.2830	0.7414	0.3692	3.1040	8.1301	4.0492

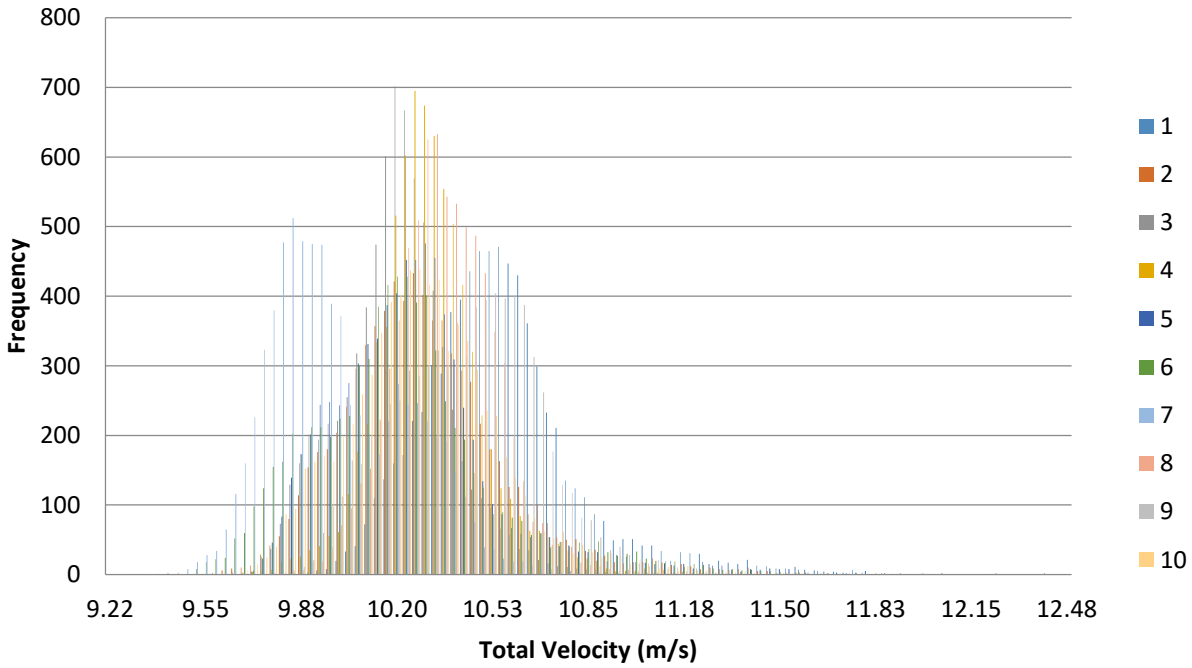


Figure 1. Velocity histogram for each interval (100 bins).

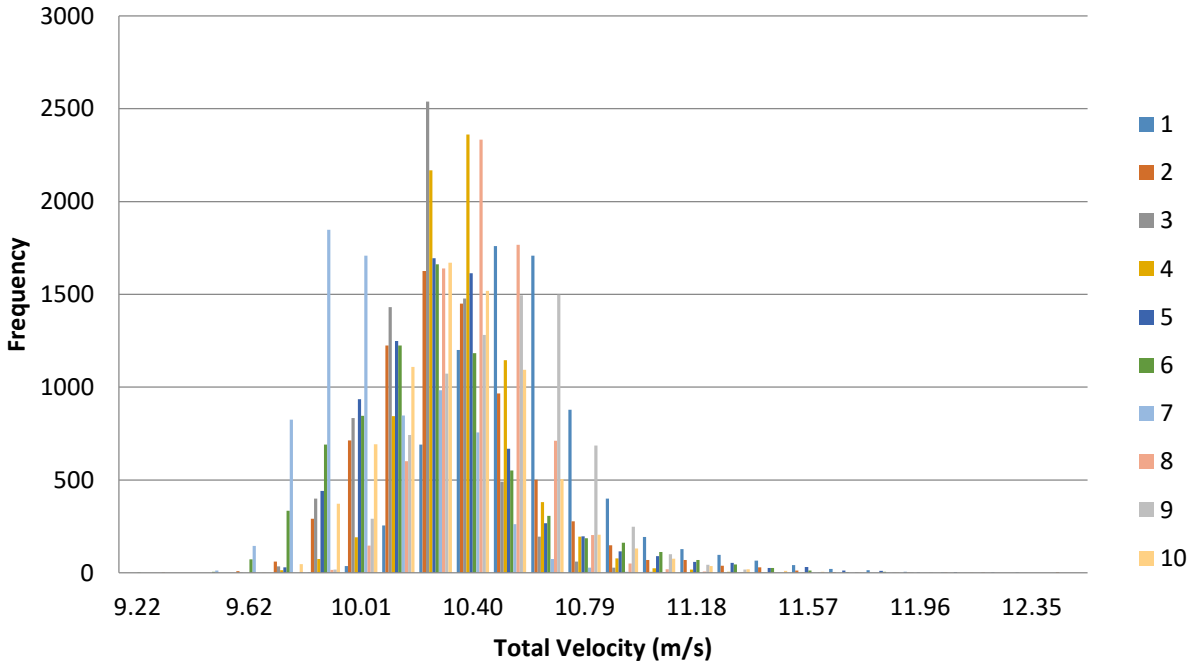
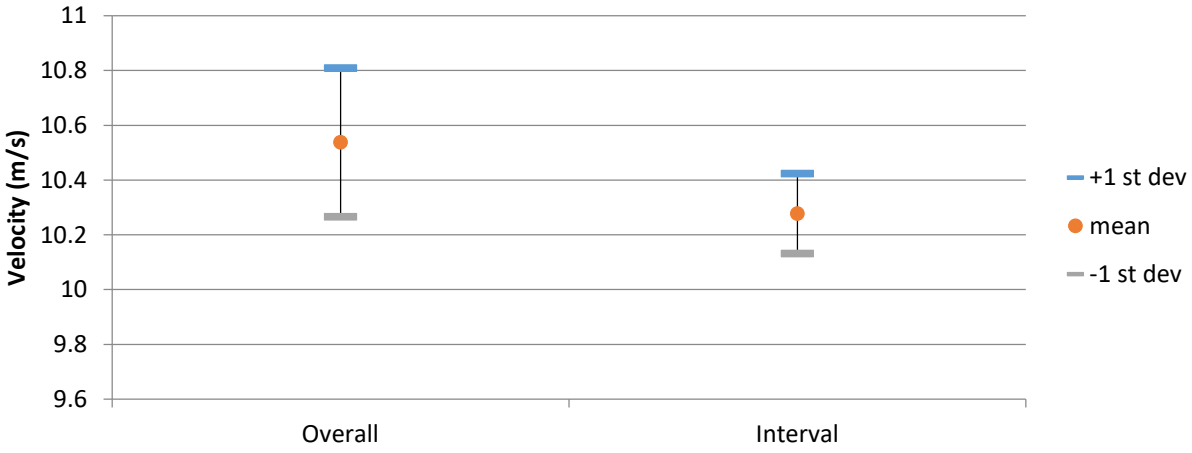
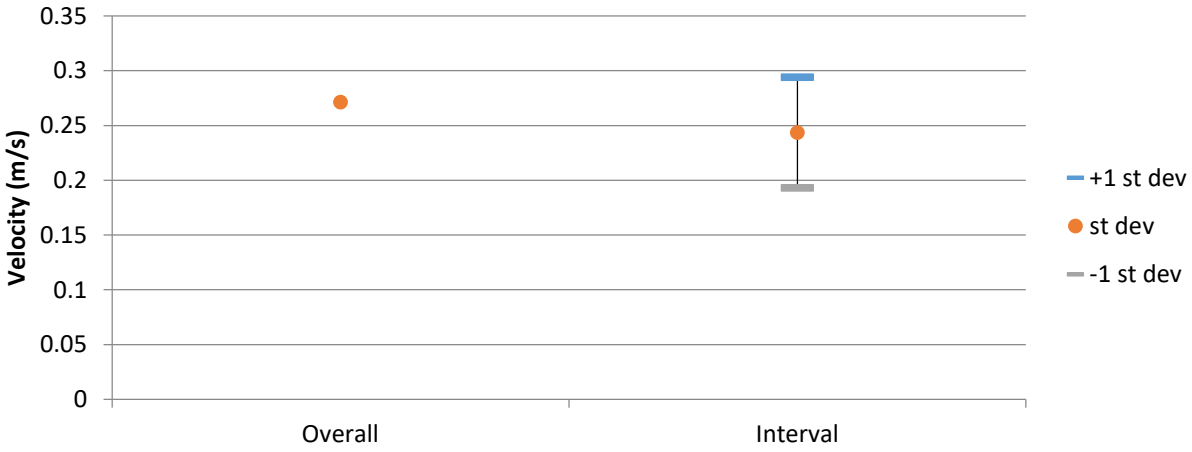


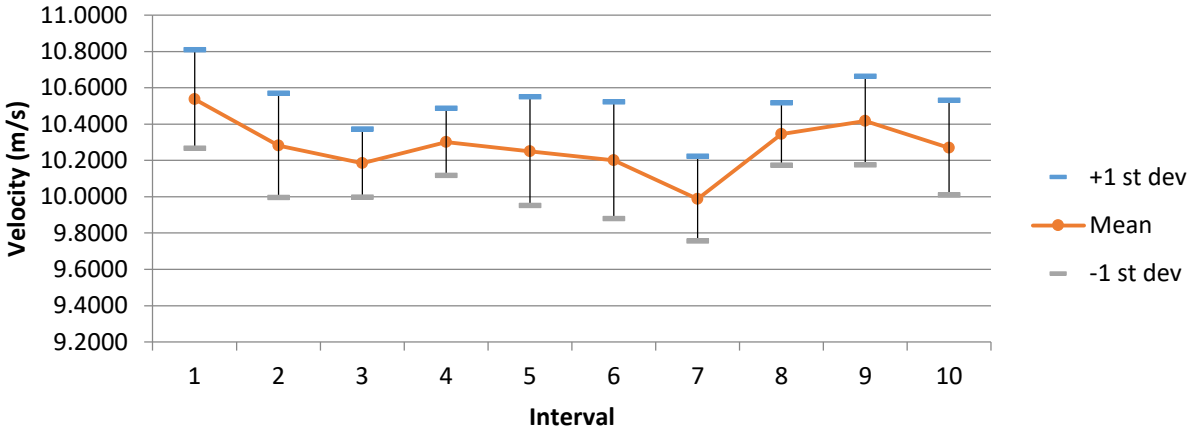
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 68
Blockage Condition: All buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: G4
First Sample Date: 13-Aug-13
First Sample Time: 10:25:32.265

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	13.1247	8.9413	10.3767	0.4683
u	10.1000	7.6400	8.9498	0.2069
v	8.9700	1.8900	4.8500	0.8527
w	0.3720	-3.9500	-1.8027	0.5025

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	12.4979	8.9413	10.1775	0.4434	4.3165
2	12.6700	9.6364	10.5696	0.4562	3.1778
3	11.9803	9.7863	10.4374	0.3317	3.2164
4	12.1719	9.6744	10.3937	0.3343	3.5810
5	12.0833	9.2259	10.2349	0.3665	3.6029
6	12.6585	9.9690	10.6116	0.3823	4.4175
7	12.8783	9.6885	10.6329	0.4697	6.1408
8	13.1247	9.2124	10.5740	0.6493	3.0554
9	11.7550	9.0401	10.0112	0.3059	3.0020
10	12.0779	9.3527	10.1240	0.3039	3.8966
		Average	10.3767	0.4043	3.8407
		St Dev	0.2256	0.1056	0.9014

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.9006	4.5565	-1.6597	0.2103	0.8125	0.5802	2.3627	9.1291	6.5188
2	9.0474	5.0852	-1.8586	0.1887	0.7425	0.4118	2.0858	8.2062	4.5514
3	8.9809	5.0135	-1.6461	0.1496	0.6681	0.2819	1.6660	7.4390	3.1393
4	8.9831	4.9097	-1.6564	0.1841	0.6452	0.3803	2.0498	7.1827	4.2340
5	8.9643	4.5960	-1.6316	0.2029	0.7583	0.3560	2.2633	8.4592	3.9709
6	9.0682	5.0651	-2.0525	0.1524	0.7298	0.3113	1.6805	8.0484	3.4328
7	8.9736	5.2572	-2.0254	0.1666	0.8887	0.4426	1.8564	9.9032	4.9321
8	8.9230	5.0596	-2.2659	0.2193	1.2590	0.4954	2.4573	14.1098	5.5516
9	8.8246	4.4983	-1.2057	0.2565	0.7200	0.4157	2.9062	8.1587	4.7106
10	8.8326	4.4598	-2.0250	0.1649	0.6548	0.3553	1.8664	7.4137	4.0223

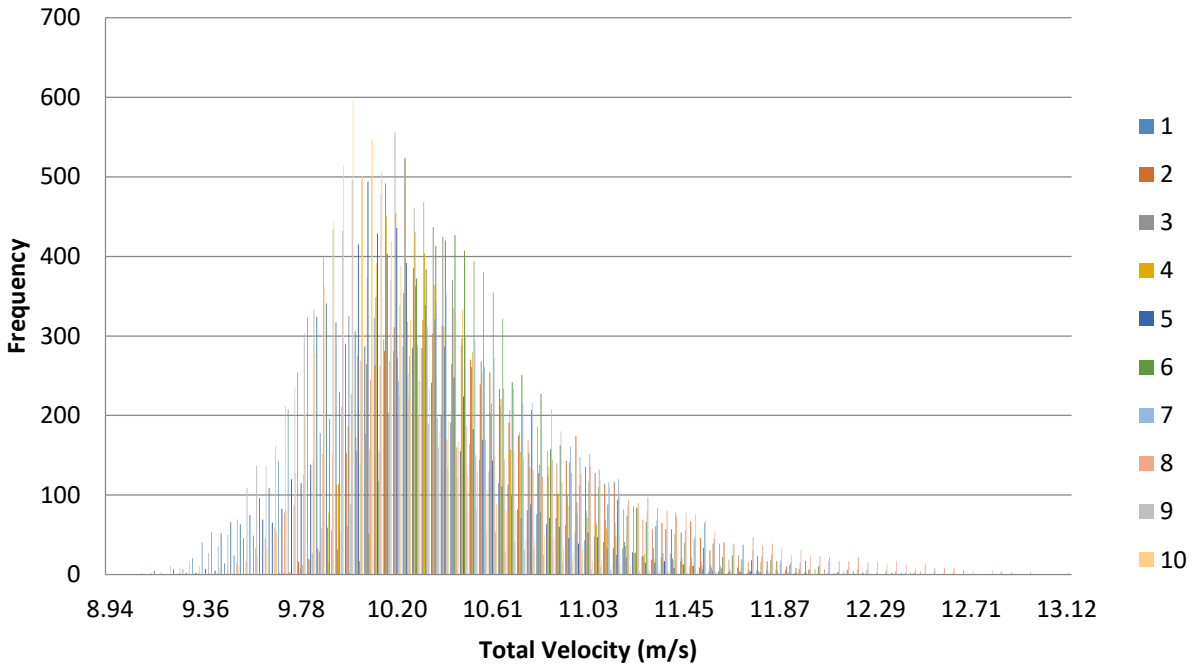


Figure 1. Velocity histogram for each interval (100 bins).

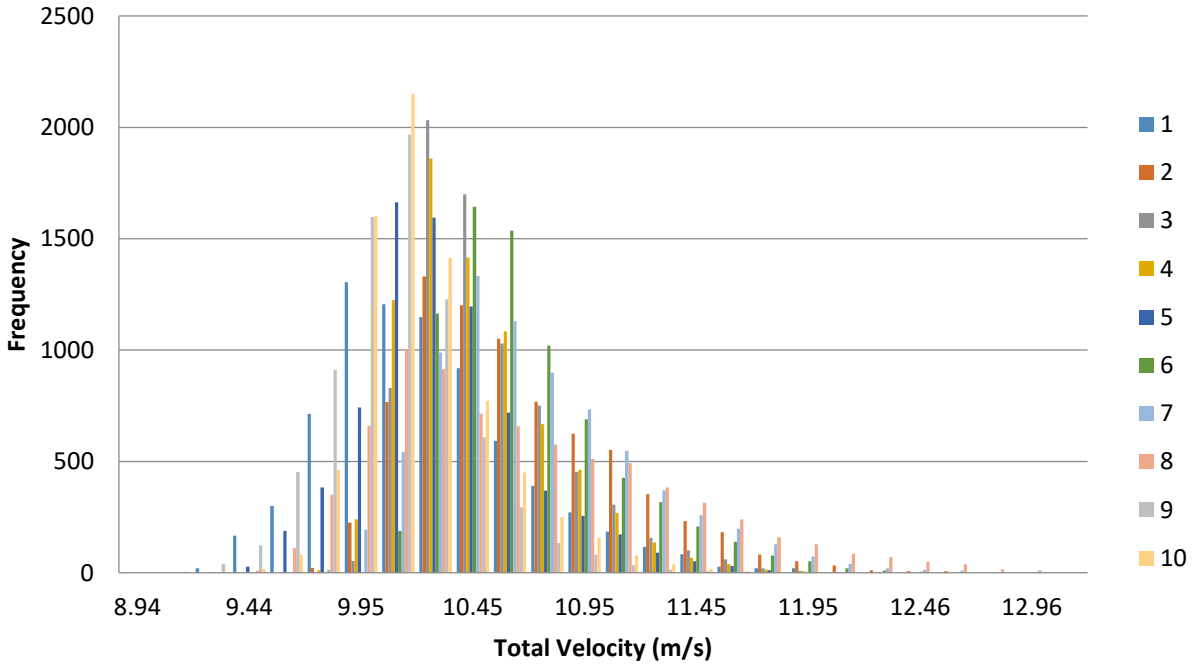
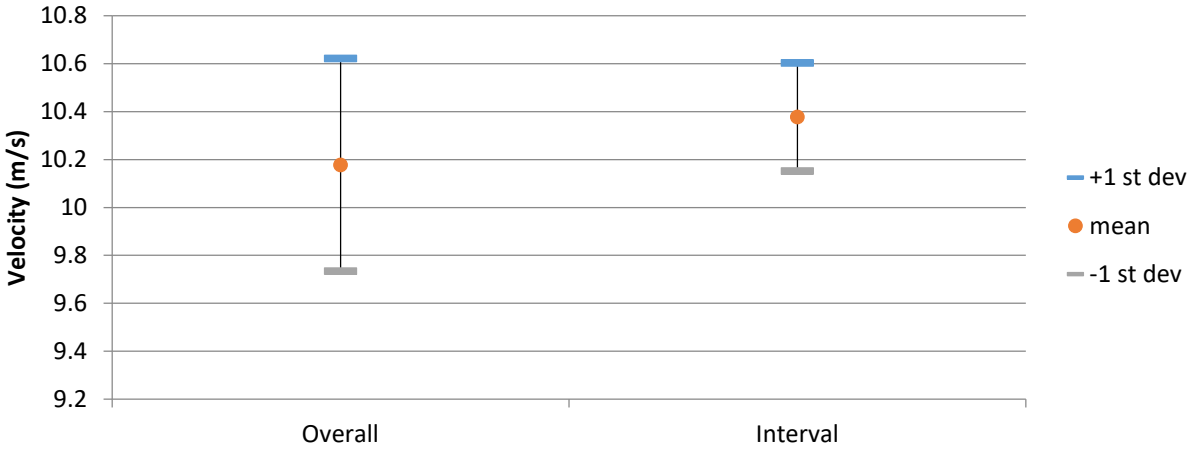
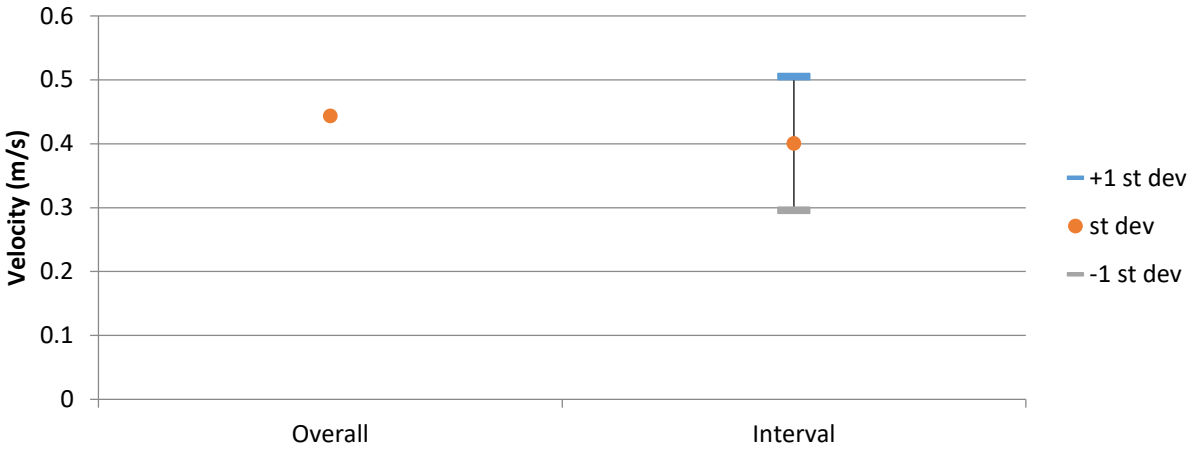


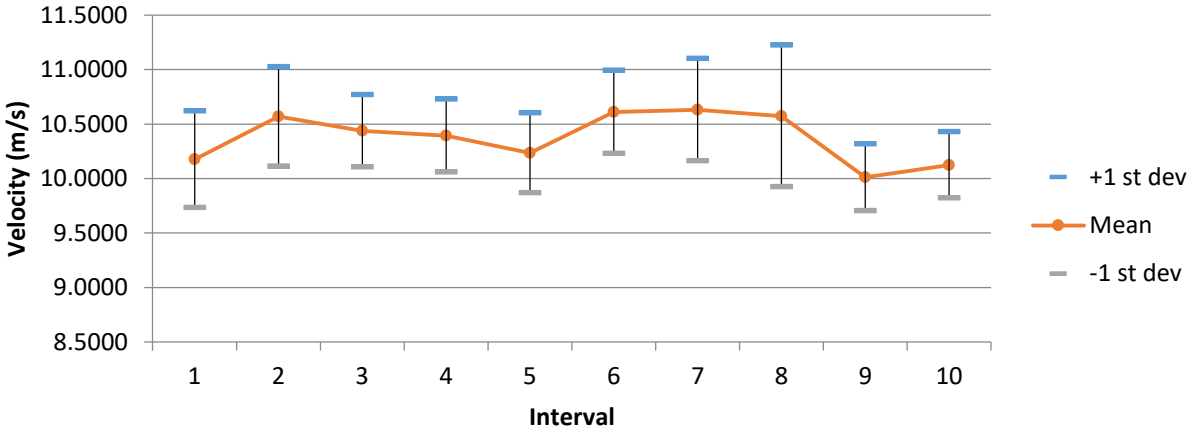
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 69
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: G5
First Sample Date: 13-Aug-13
First Sample Time: 10:27:04.781

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.1542	8.9358	9.7129	0.1992
u	9.9500	7.9300	8.9449	0.2218
v	6.2500	2.0200	3.6101	0.4726
w	0.2960	-2.4500	-0.9811	0.3179

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	10.1998	8.9358	9.5443	0.1599	1.8220
2	10.6310	9.0921	9.7541	0.1777	3.2205
3	11.1542	9.1923	9.8405	0.3169	1.5550
4	10.2185	9.0454	9.5960	0.1492	1.6189
5	10.6783	9.1129	9.7558	0.1579	1.6021
6	10.4926	9.0485	9.6735	0.1550	1.8203
7	10.5552	9.1906	9.7210	0.1770	1.3932
8	10.2457	9.1509	9.6863	0.1349	1.5312
9	10.4191	9.2584	9.7627	0.1495	1.5445
10	10.4837	9.3053	9.7951	0.1513	1.7804
		Average	9.7129	0.1729	1.7888
		St Dev	0.0904	0.0522	0.4953

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.9407	3.2304	-0.6510	0.2435	0.4357	0.2735	2.7235	4.8732	3.0585
2	8.9695	3.6541	-1.0478	0.1957	0.4209	0.2371	2.1821	4.6923	2.6434
3	8.9275	3.8763	-1.2964	0.1867	0.6193	0.3323	2.0915	6.9375	3.7218
4	8.9532	3.3332	-0.7994	0.2256	0.3064	0.2259	2.5193	3.4221	2.5236
5	8.9408	3.7306	-1.0359	0.2061	0.3937	0.2741	2.3047	4.4033	3.0655
6	8.9299	3.5735	-0.8815	0.2272	0.4113	0.2987	2.5448	4.6063	3.3449
7	8.8282	3.8809	-1.0871	0.2024	0.4382	0.3414	2.2921	4.9638	3.8666
8	8.9258	3.5788	-1.0700	0.2159	0.3774	0.1735	2.4186	4.2284	1.9441
9	9.0466	3.4808	-1.0598	0.2336	0.3745	0.2430	2.5827	4.1396	2.6857
10	8.9870	3.7626	-0.8819	0.2122	0.4090	0.2330	2.3609	4.5510	2.5923

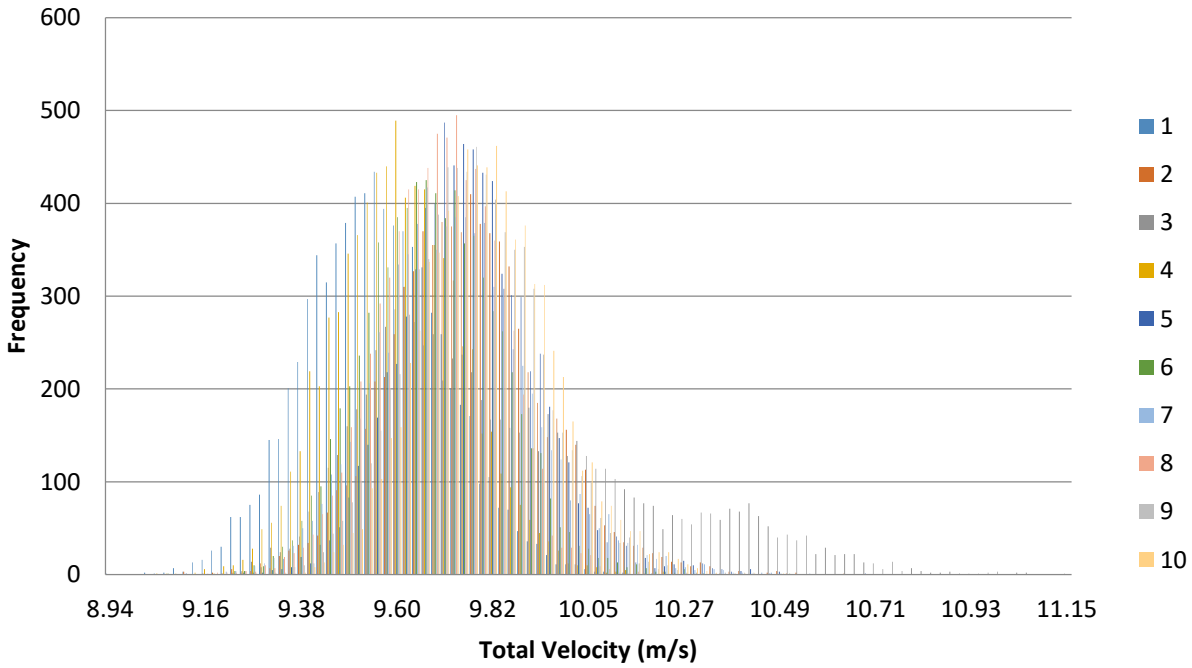


Figure 1. Velocity histogram for each interval (100 bins).

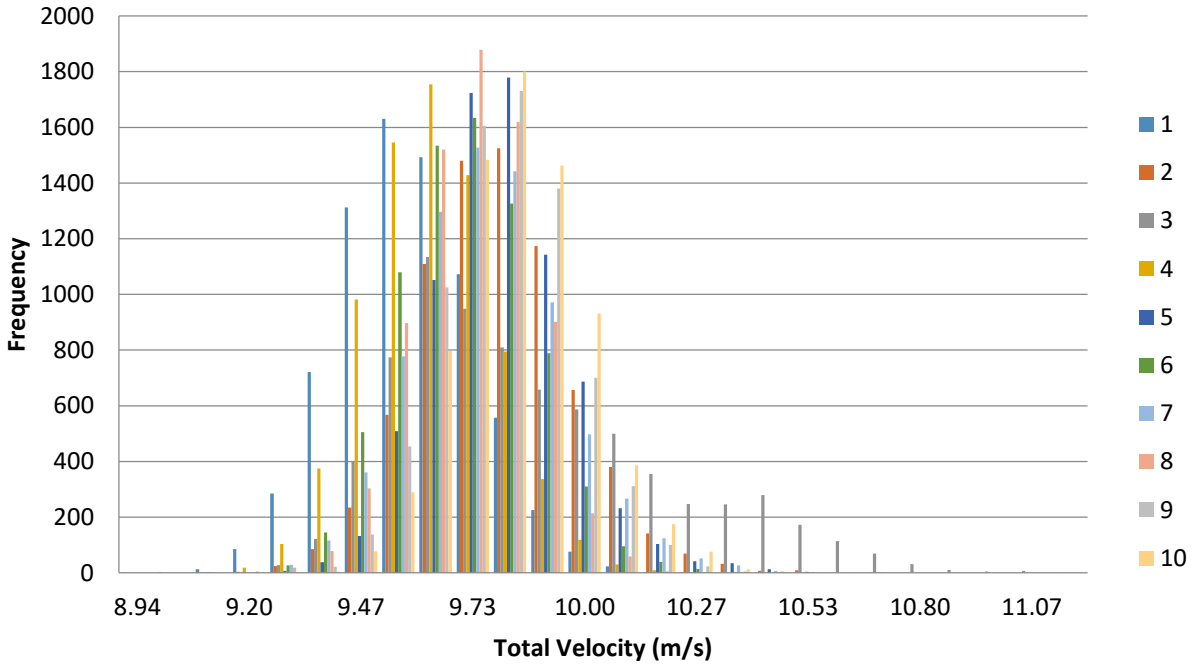
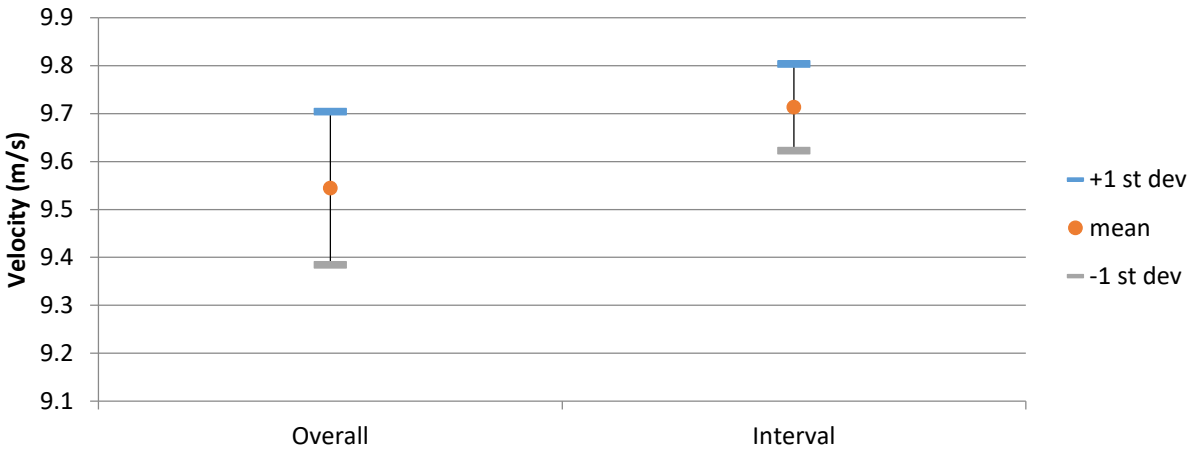
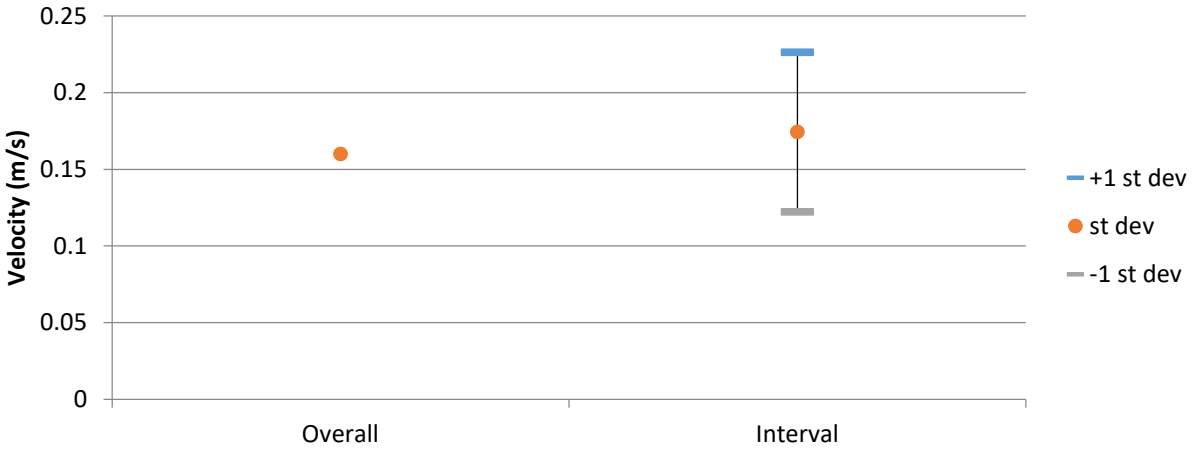


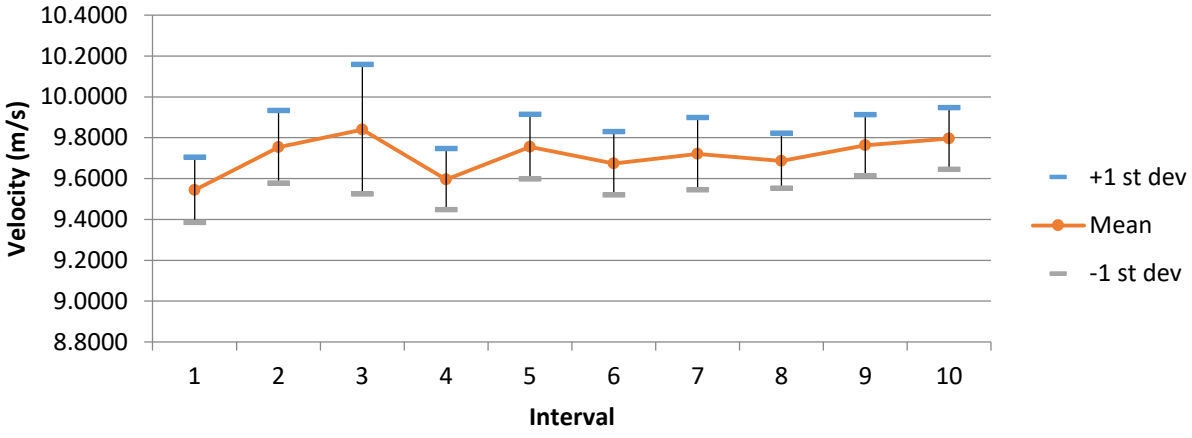
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 70
Blockage Condition: All buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: G2
First Sample Date: 13-Aug-13
First Sample Time: 10:28:58.218

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	13.5193	9.9749	11.0706	0.4577
u	10.3000	7.8000	9.1646	0.2725
v	8.3200	1.5200	4.1276	0.9476
w	-2.8500	-6.2900	-4.5375	0.4217

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	12.9997	10.0917	10.9266	0.4143	3.7914	0	0.00 %
2	13.2423	10.4864	11.2721	0.3859	3.4231	0	0.00 %
3	13.4157	10.4398	11.2969	0.4310	3.8152	0	0.00 %
4	13.1092	10.2189	11.1512	0.4482	4.0189	0	0.00 %
5	12.1411	10.2920	10.7715	0.2439	2.2642	0	0.00 %
6	12.1134	10.2851	10.6319	0.1588	1.4933	0	0.00 %
7	12.0107	10.1772	10.7879	0.2280	2.1139	0	0.00 %
8	12.6846	10.2408	10.9705	0.3883	3.5391	0	0.00 %
9	13.3084	9.9749	11.3825	0.4080	3.5840	1	0.01 %
10	13.5193	10.5536	11.5144	0.3861	3.3534	0	0.00 %
		Average	11.0706	0.3492	3.1396		
		St dev	0.2802	0.0951	0.8165		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.9584	3.9549	-4.7511	0.2686	0.9366	0.3835	2.9982	10.4545	4.2806
2	9.2333	4.5413	-4.5443	0.1429	0.7486	0.3178	1.5474	8.1081	3.4415
3	9.2686	4.4488	-4.5997	0.2060	0.8751	0.3769	2.2220	9.4417	4.0661
4	9.0243	4.4060	-4.7550	0.2444	0.9384	0.3862	2.7080	10.3989	4.2793
5	9.0982	3.5108	-4.5299	0.1806	0.5925	0.2803	1.9854	6.5118	3.0807
6	9.1602	3.2303	-4.2859	0.2097	0.4869	0.2598	2.2889	5.3153	2.8363
7	9.2449	3.5078	-4.2511	0.2803	0.5413	0.4636	3.0320	5.8548	5.0152
8	8.9711	3.8930	-4.8727	0.3114	0.8754	0.5104	3.4711	9.7575	5.6891
9	9.2539	4.8763	-4.4178	0.2489	0.7628	0.3932	2.6897	8.2429	4.2487
10	9.4336	4.9064	-4.3679	0.1662	0.7028	0.2553	1.7620	7.4499	2.7065

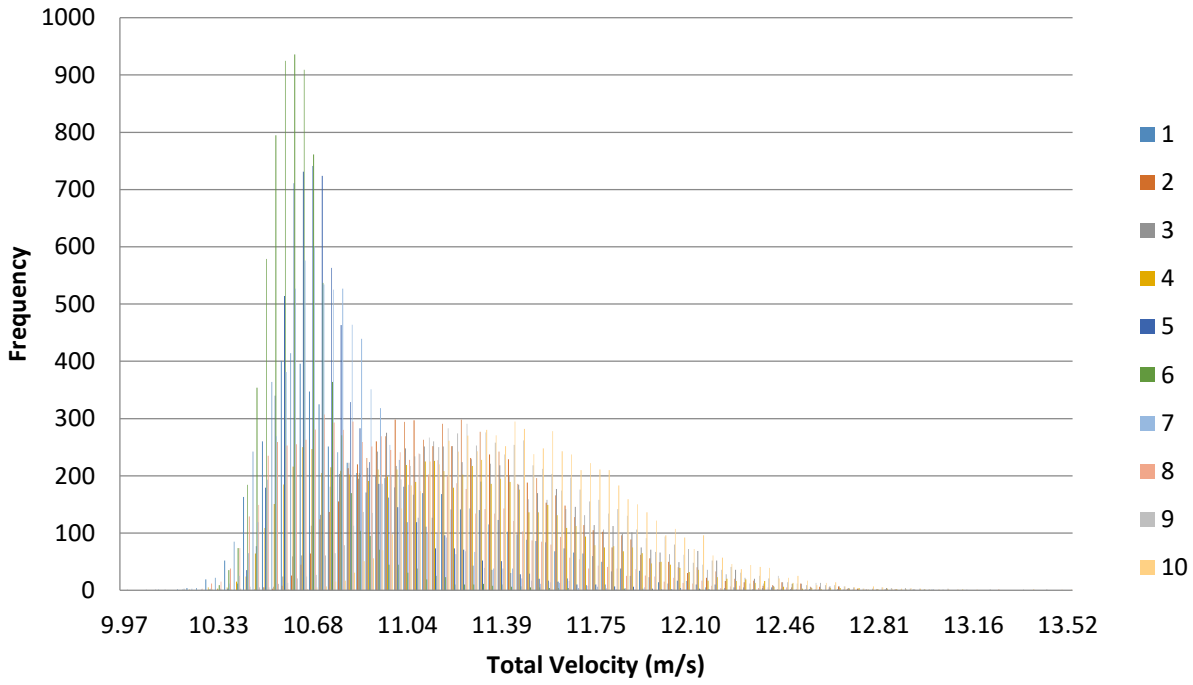


Figure 1. Velocity histogram for each interval (100 bins).

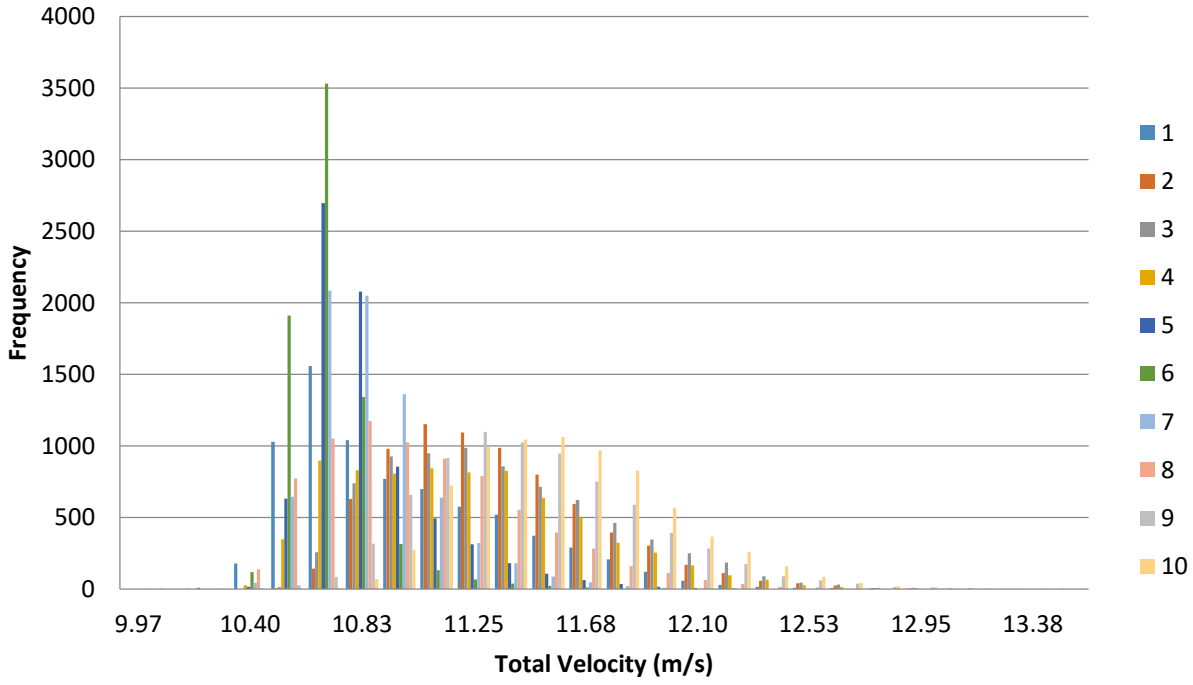
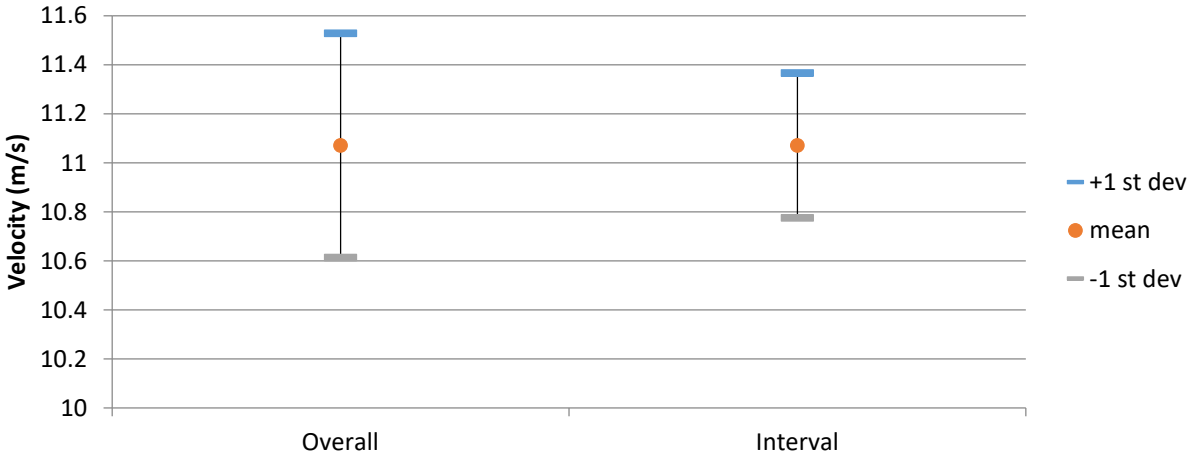
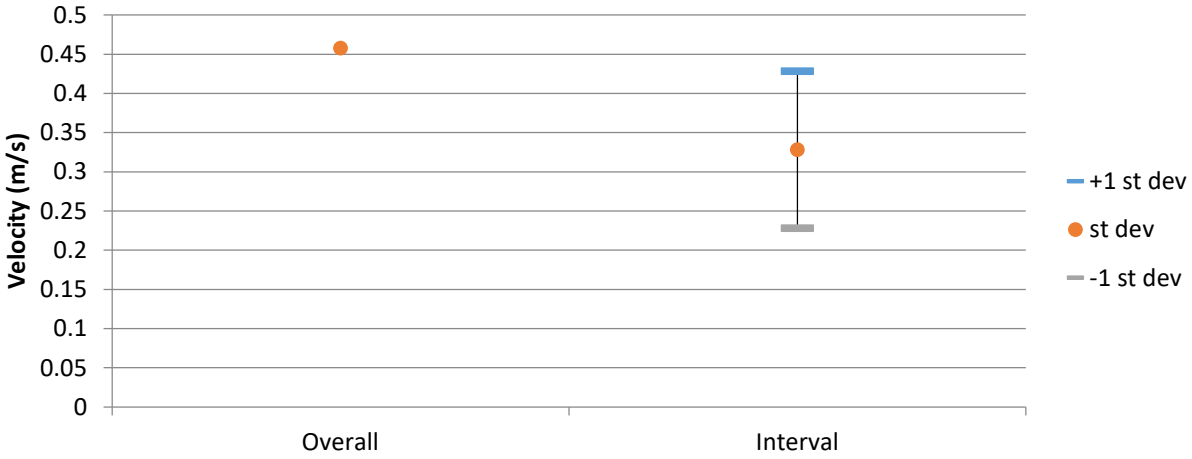


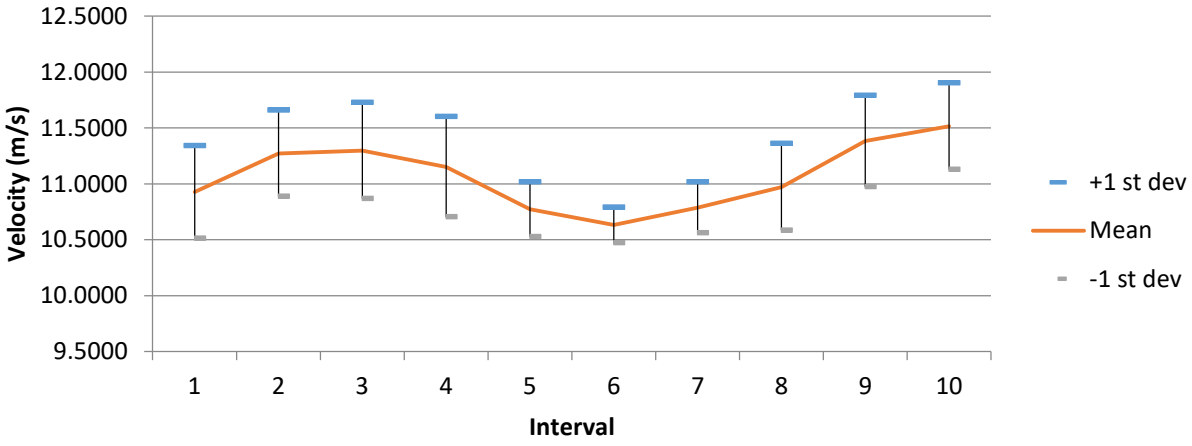
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 71
Blockage Condition: All buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 13-Aug-13
First Sample Time: 10:31:26.468

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.7750	10.0697	10.9719	0.1916
u	11.4000	9.5900	10.6205	0.1893
v	2.5300	-3.3800	0.0515	0.5332
w	-0.5050	-4.3700	-2.6256	0.6398

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.5453	10.3461	10.9487	0.1726	1.5623
2	11.6120	10.3176	10.9182	0.1706	1.5054
3	11.5093	10.2964	10.9036	0.1641	1.7772
4	11.7750	10.1430	10.9249	0.1942	1.4489
5	11.6577	10.3553	11.0313	0.1598	1.7235
6	11.7748	10.3342	11.0382	0.1902	1.4560
7	11.5830	10.3435	11.0718	0.1612	1.9044
8	11.5928	10.2388	10.8918	0.2074	1.6339
9	11.5970	10.0697	10.9243	0.1785	1.6951
10	11.7413	10.4035	11.0668	0.1876	1.6280
		Average	10.9719	0.1786	1.6335
		St Dev	0.0714	0.0158	0.1389

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.5774	-0.1045	-2.7782	0.1657	0.3073	0.4130	1.5661	2.9054	3.9048
2	10.6172	0.0527	-2.4957	0.1654	0.2785	0.4185	1.5578	2.6233	3.9419
3	10.6259	-0.1889	-2.3672	0.1769	0.3562	0.4564	1.6645	3.3518	4.2951
4	10.6892	0.3457	-2.0747	0.2053	0.4970	0.6464	1.9208	4.6500	6.0470
5	10.6109	0.3261	-2.9592	0.1783	0.3050	0.3696	1.6808	2.8739	3.4831
6	10.5906	0.7019	-2.9372	0.2176	0.4776	0.5682	2.0547	4.5100	5.3654
7	10.6312	0.1101	-3.0466	0.1909	0.3423	0.3766	1.7957	3.2199	3.5425
8	10.5675	-0.1328	-2.4671	0.1977	0.3072	0.8735	1.8712	2.9072	8.2658
9	10.6892	-0.4449	-2.0786	0.1686	0.5515	0.5119	1.5773	5.1597	4.7886
10	10.6058	-0.1509	-3.0512	0.1781	0.6843	0.4402	1.6789	6.4520	4.1503

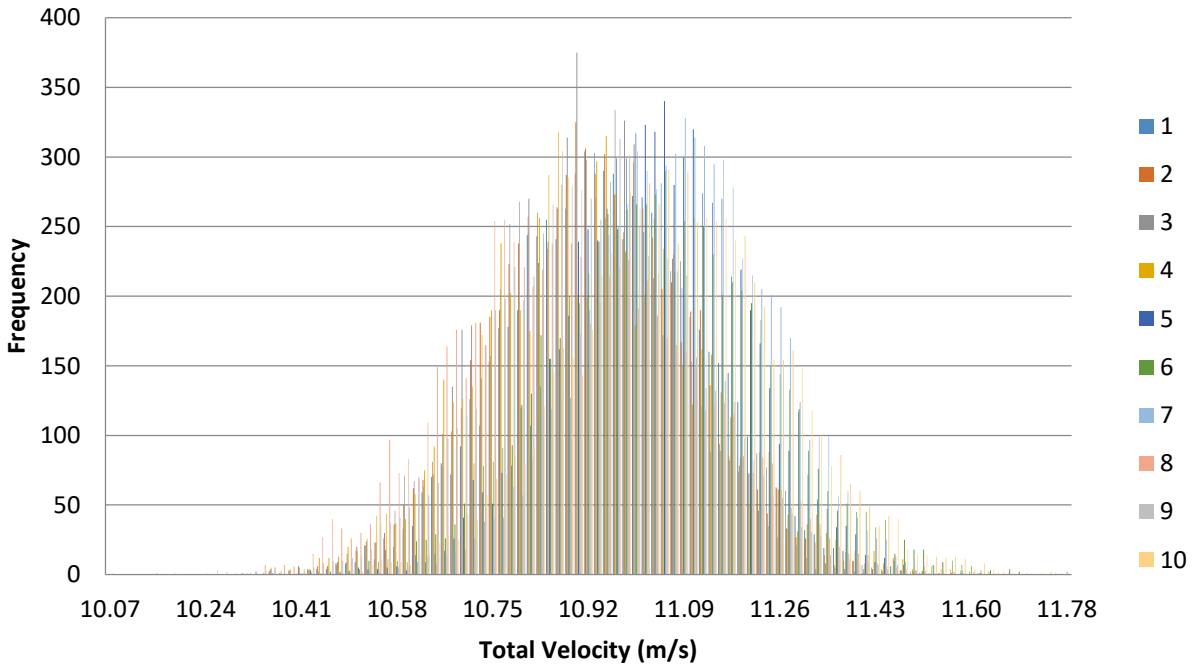


Figure 1. Velocity histogram for each interval (100 bins).

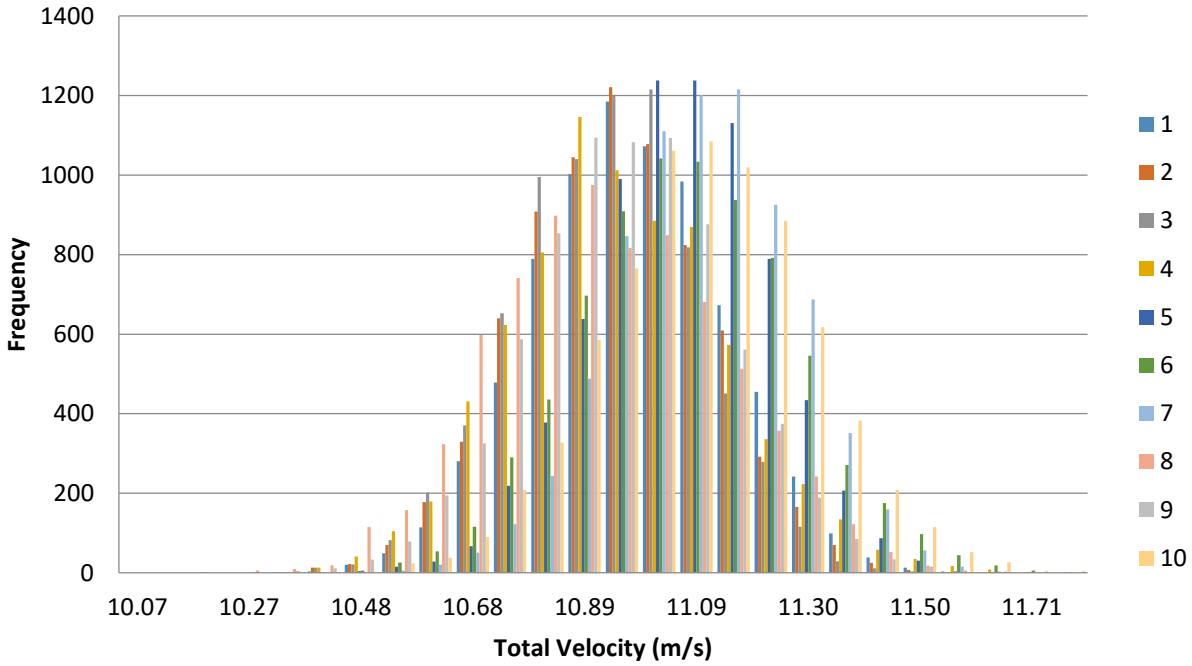
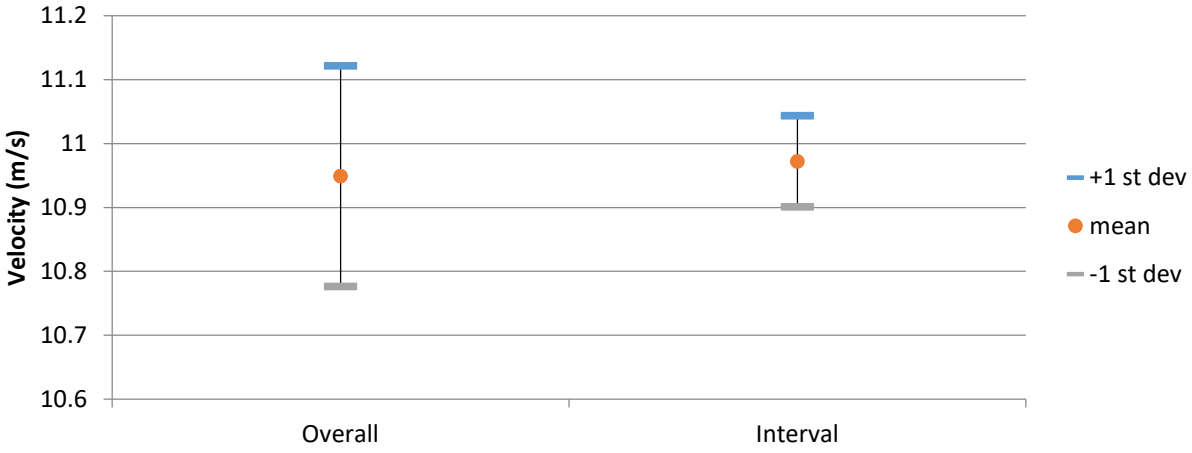
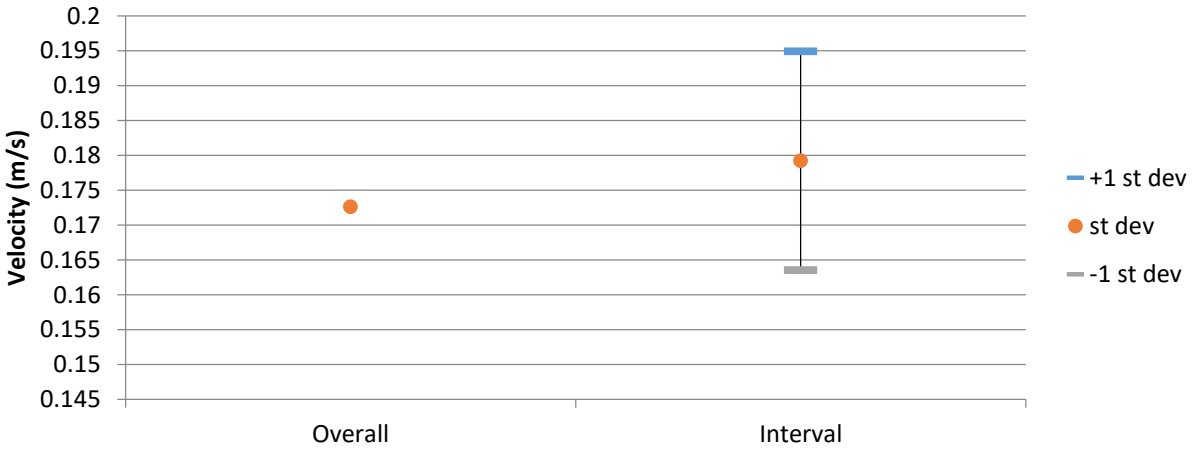


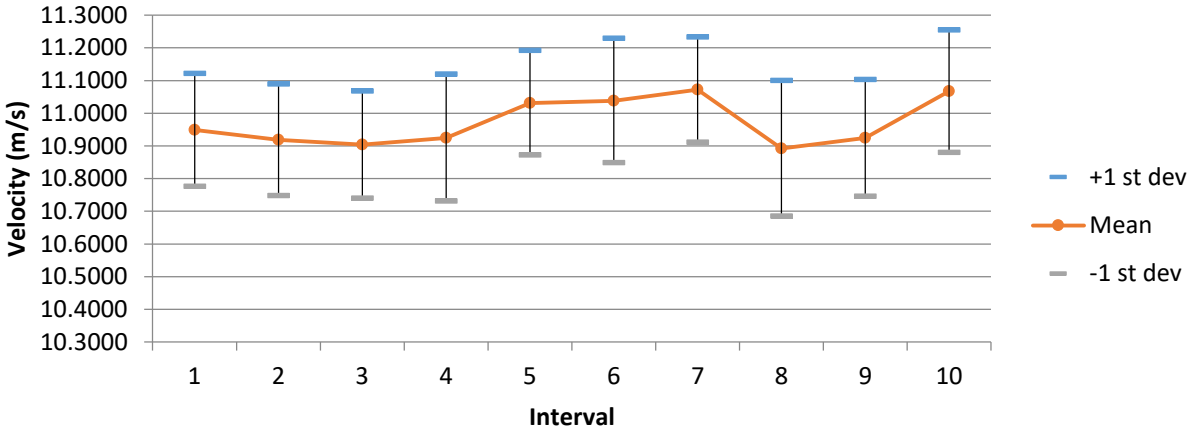
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 72
Blockage Condition: All buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 13-Aug-13
First Sample Time: 10:33:46.250

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.9357	9.9545	10.9372	0.2173
u	11.6000	9.7100	10.6472	0.2122
v	2.1600	-4.3900	-0.2398	0.8057
w	0.0444	-4.3700	-2.2468	0.7124

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.9264	10.2544	10.9861	0.2227	1.8383
2	11.8893	9.9545	10.8333	0.1991	1.7392
3	11.5443	10.0522	10.7830	0.1875	1.7145
4	11.9357	10.1406	10.8615	0.1862	1.6611
5	11.4843	10.1496	10.8604	0.1804	1.7613
6	11.8454	10.3159	11.0144	0.1940	1.5822
7	11.7438	10.2076	10.9810	0.1737	1.6603
8	11.5330	10.2106	10.9135	0.1812	1.7217
9	11.6923	10.3044	10.9594	0.1887	1.4960
10	11.8268	10.4857	11.1796	0.1672	1.7197
		Average	10.9372	0.1881	1.6894
		St Dev	0.1137	0.0153	0.0911

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.5608	-0.6348	-2.8855	0.1881	0.4726	0.4762	1.7807	4.4755	4.5096
2	10.5316	-1.0609	-2.2354	0.1909	0.4511	0.3477	1.8128	4.2831	3.3018
3	10.6340	-0.7838	-1.5315	0.1980	0.3452	0.3304	1.8616	3.2461	3.1068
4	10.6151	-0.4485	-2.1928	0.1900	0.3896	0.3587	1.7903	3.6701	3.3790
5	10.7362	-0.5697	-1.4393	0.1934	0.3180	0.4247	1.8016	2.9616	3.9559
6	10.7245	-1.0440	-1.9849	0.2618	0.5117	0.9907	2.4409	4.7709	9.2378
7	10.5911	0.3196	-2.7671	0.1793	0.7562	0.2793	1.6925	7.1399	2.6367
8	10.6442	0.7715	-2.1697	0.1988	0.4493	0.5426	1.8681	4.2210	5.0980
9	10.7294	0.5290	-2.1106	0.1996	0.3815	0.3212	1.8607	3.5554	2.9933
10	10.7049	0.5235	-3.1514	0.1918	0.2785	0.3087	1.7914	2.6012	2.8833

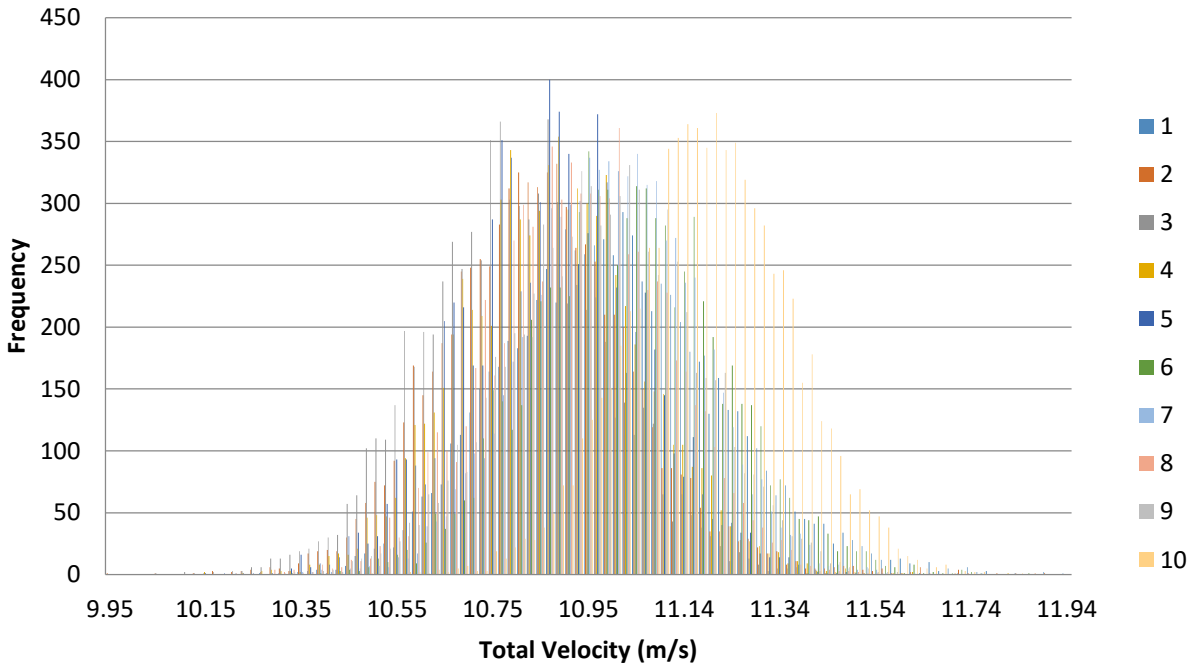


Figure 1. Velocity histogram for each interval (100 bins).

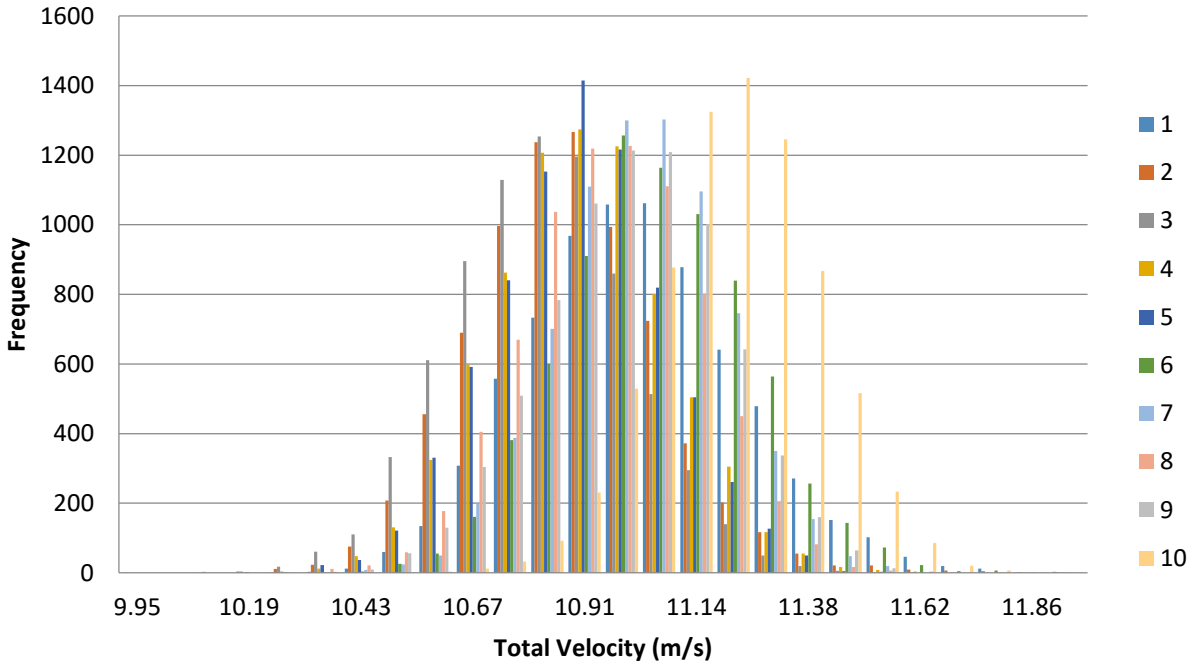
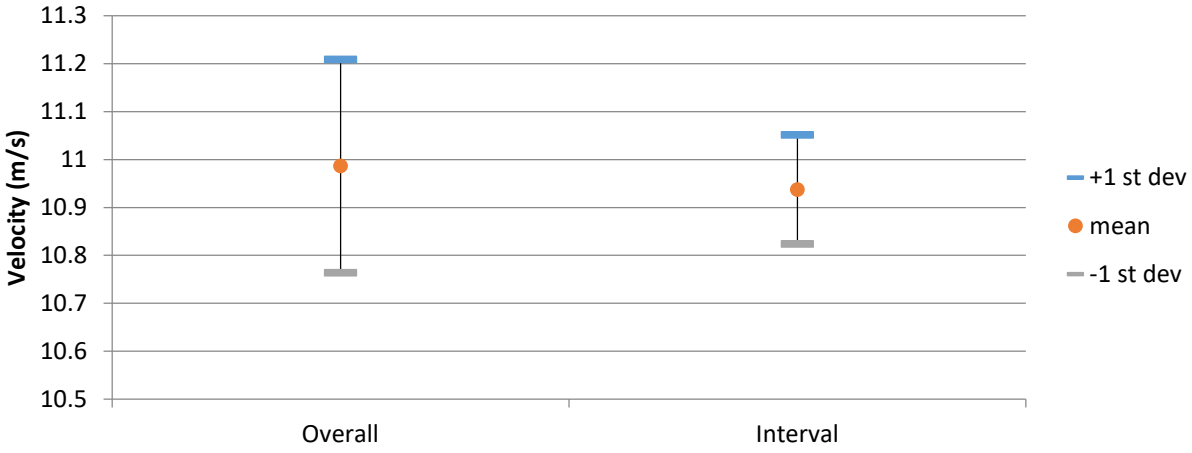
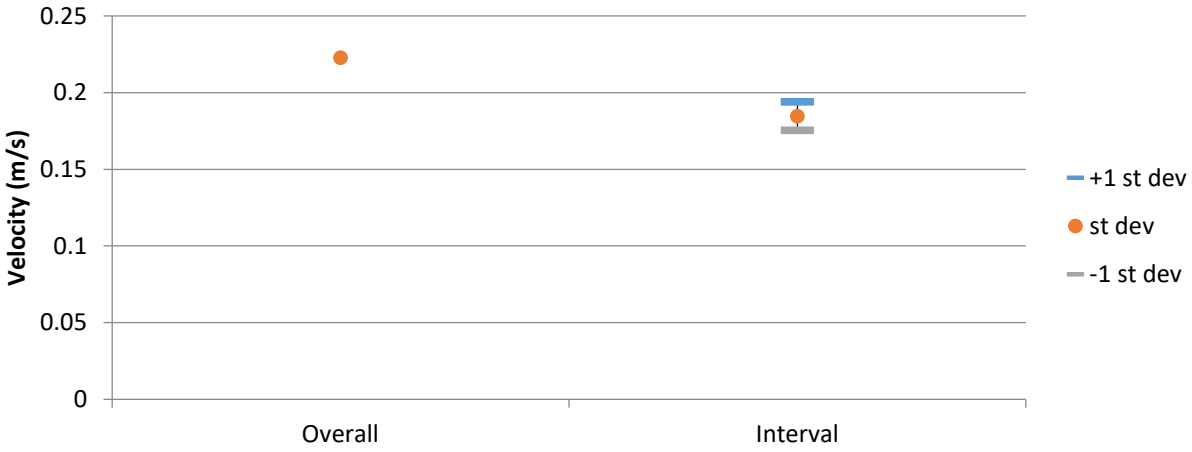


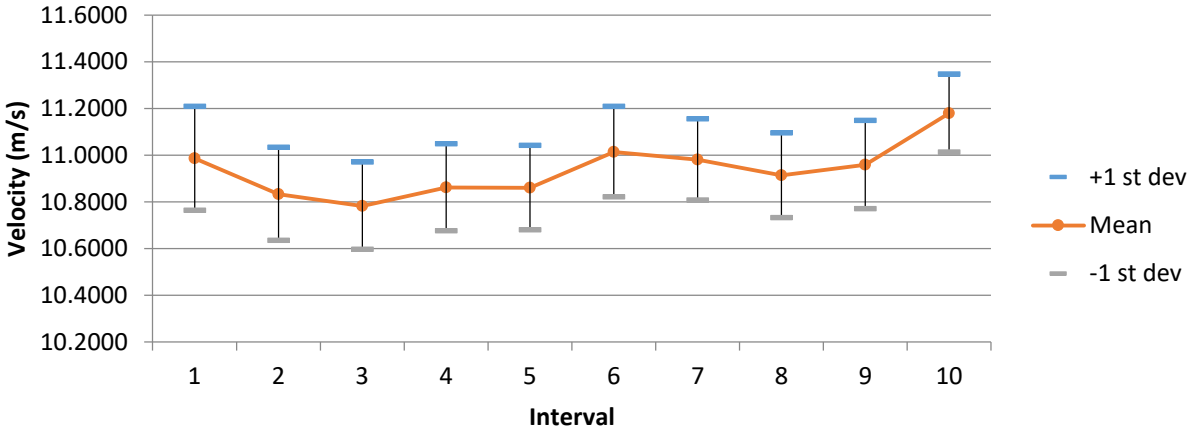
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 73
Blockage Condition: All buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 13-Aug-13
First Sample Time: 10:44:22.812

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.6430	10.2630	10.9838	0.1621
u	11.3000	9.7000	10.5790	0.1779
v	2.0200	-0.6450	0.7981	0.3948
w	-1.6800	-4.0600	-2.7879	0.3987

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.6203	10.3601	11.0364	0.1662	1.4561
2	11.6029	10.3870	10.9739	0.1598	1.4160
3	11.5357	10.4661	10.9952	0.1557	1.4758
4	11.5595	10.3770	10.9759	0.1620	1.4994
5	11.6430	10.3919	10.9916	0.1648	1.4229
6	11.5045	10.4070	10.9615	0.1560	1.4941
7	11.5799	10.3161	10.9928	0.1642	1.5078
8	11.4537	10.3128	10.9399	0.1650	1.4068
9	11.5847	10.3299	10.9810	0.1545	1.4121
10	11.5815	10.2630	10.9903	0.1552	1.4597
		Average	10.9838	0.1603	1.4551
		St Dev	0.0251	0.0047	0.0367

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.5520	0.4147	-3.1611	0.1918	0.3458	0.4058	1.8175	3.2770	3.8460
2	10.6299	0.4417	-2.6583	0.1671	0.3072	0.2699	1.5723	2.8899	2.5390
3	10.5952	0.8656	-2.7755	0.1685	0.3326	0.2627	1.5904	3.1392	2.4799
4	10.6044	1.0990	-2.5725	0.1702	0.2727	0.3394	1.6046	2.5719	3.2006
5	10.6026	1.1410	-2.6422	0.1681	0.2111	0.2661	1.5851	1.9906	2.5094
6	10.5877	1.0448	-2.6160	0.1668	0.2340	0.2477	1.5753	2.2102	2.3394
7	10.5881	0.9111	-2.7749	0.1693	0.2373	0.3795	1.5990	2.2409	3.5843
8	10.6123	1.0127	-2.4242	0.1763	0.2295	0.3212	1.6613	2.1622	3.0271
9	10.5617	0.6765	-2.9021	0.1650	0.3133	0.2285	1.5626	2.9664	2.1631
10	10.4562	0.3743	-3.3522	0.1729	0.2291	0.1387	1.6540	2.1911	1.3262

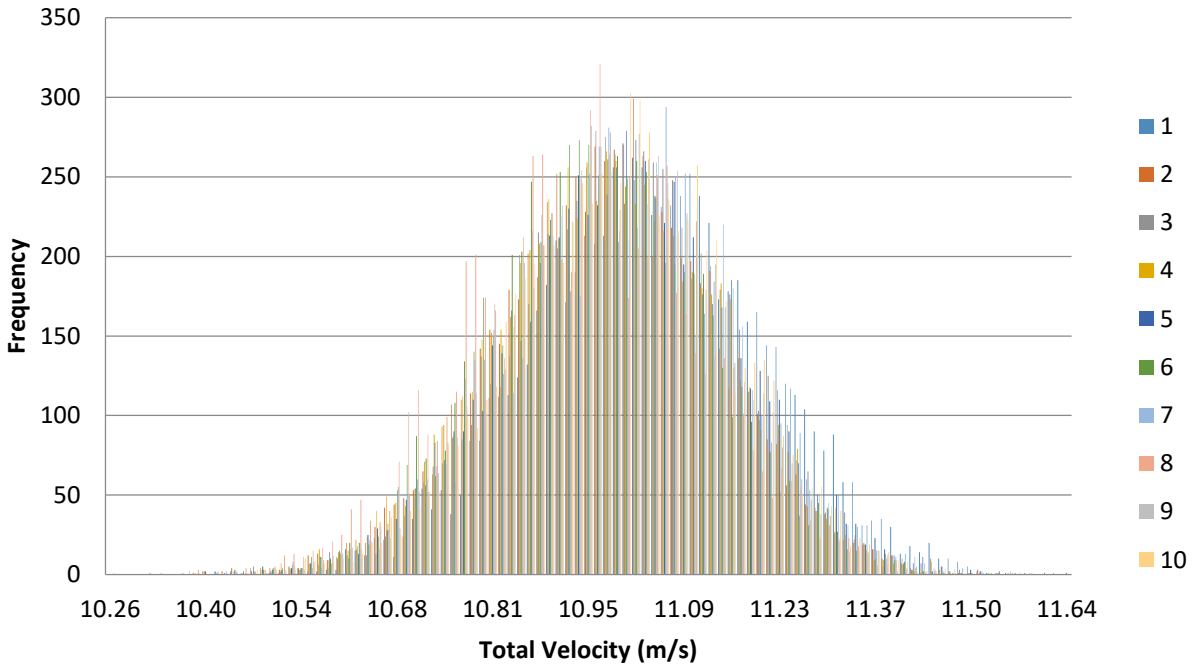


Figure 1. Velocity histogram for each interval (100 bins).

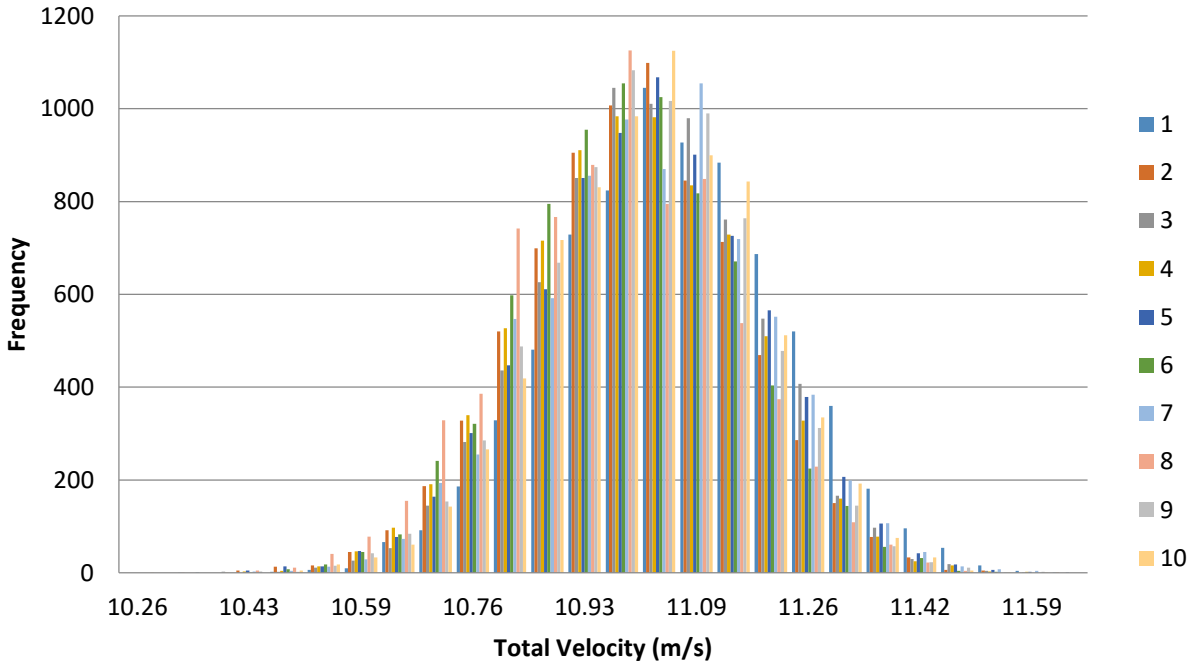
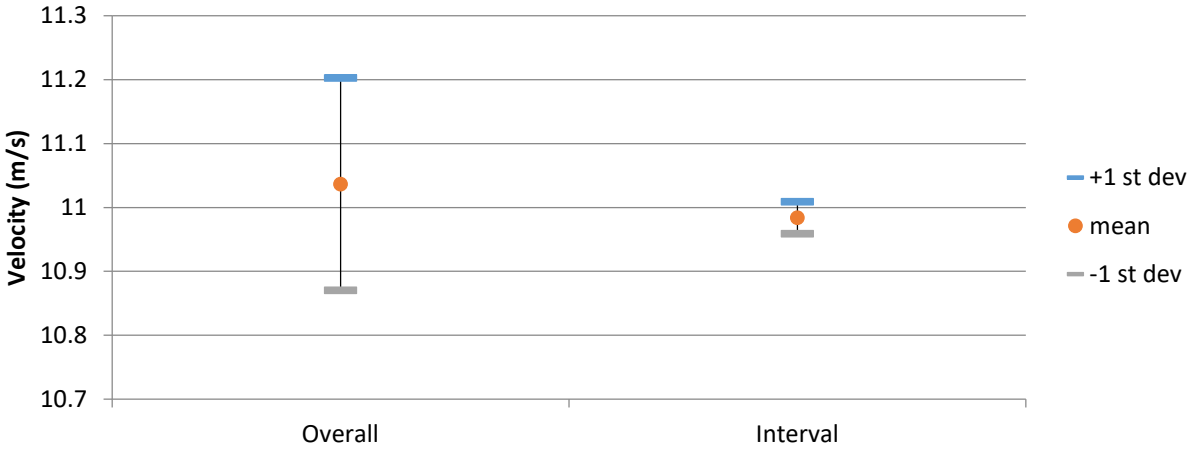
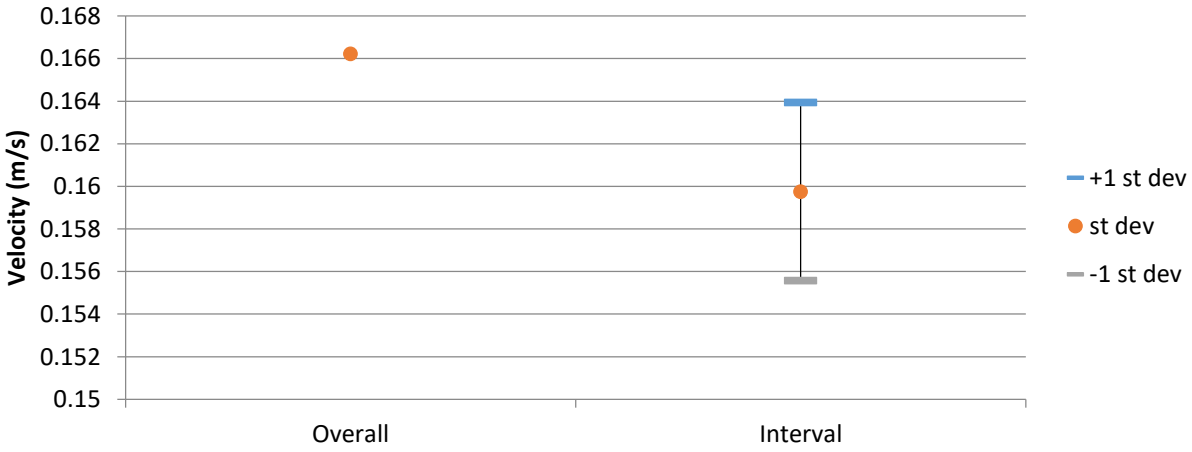


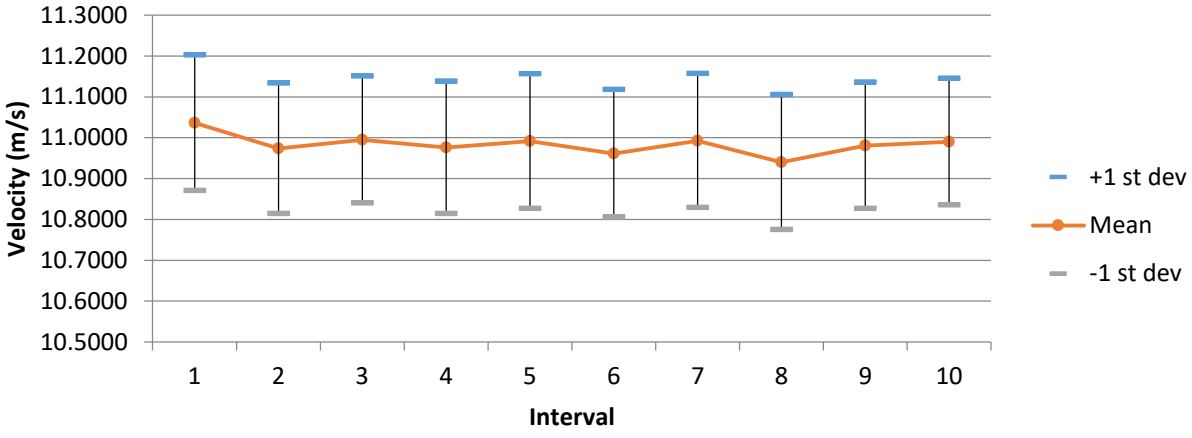
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 74
Blockage Condition: All Buildings.
Blower Frequency: E4 Hz
Inlet Probe Location: 50
First Sample Date: 13-Aug-13
First Sample Time: 10:46:02.359

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.4072	9.0549	10.3101	0.2969
u	11.3000	8.9800	10.2256	0.2970
v	0.3590	-1.4400	-0.5895	0.2252
w	-0.5490	-2.1200	-1.1407	0.1896

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.3829	9.2573	10.3095	0.3056	2.8179
2	11.3384	9.2200	10.3104	0.2905	2.8568
3	11.2740	9.3664	10.3403	0.2954	2.9124
4	11.2727	9.2865	10.3060	0.3002	2.8790
5	11.2767	9.1008	10.2982	0.2965	2.8555
6	11.2763	9.0549	10.3051	0.2943	2.9535
7	11.3018	9.3206	10.2974	0.3041	2.9635
8	11.2854	9.2036	10.3178	0.3058	2.8613
9	11.4072	9.2498	10.2997	0.2947	2.6983
10	11.2647	9.3362	10.3162	0.2784	2.8762
		Average	10.3101	0.2965	2.8674
		St Dev	0.0127	0.0083	0.0709

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.2296	-0.6604	-1.0758	0.3032	0.1892	0.1098	2.9637	1.8499	1.0729
2	10.1825	-0.7436	-1.4065	0.2918	0.2049	0.2157	2.8660	2.0127	2.1183
3	10.2622	-0.4490	-1.1438	0.2973	0.2346	0.2074	2.8970	2.2863	2.0212
4	10.2325	-0.5821	-1.0568	0.2984	0.1928	0.1334	2.9161	1.8839	1.3039
5	10.2125	-0.6243	-1.1429	0.2954	0.2170	0.1235	2.8923	2.1245	1.2097
6	10.2212	-0.6795	-1.1042	0.2922	0.1723	0.1191	2.8586	1.6859	1.1648
7	10.2152	-0.5781	-1.1416	0.3037	0.1761	0.1344	2.9735	1.7243	1.3161
8	10.2348	-0.4779	-1.1797	0.3075	0.2148	0.1988	3.0045	2.0984	1.9422
9	10.2107	-0.6165	-1.1640	0.2954	0.2440	0.1734	2.8927	2.3899	1.6982
10	10.2543	-0.4839	-0.9920	0.2769	0.2029	0.1249	2.7008	1.9784	1.2176

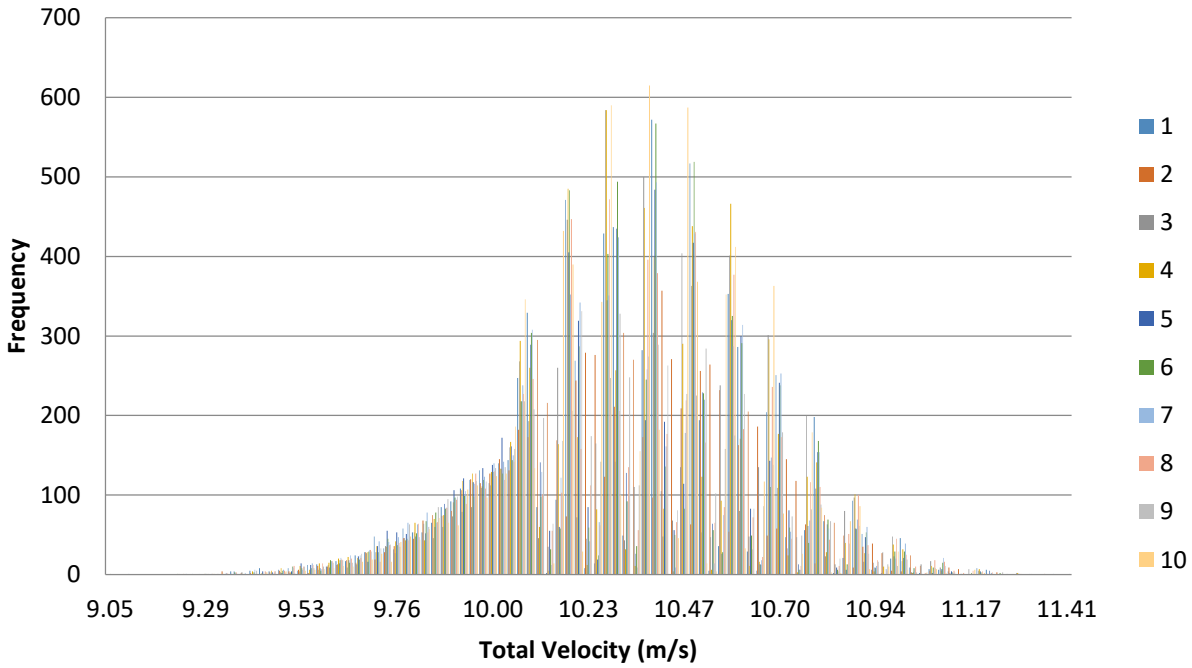


Figure 1. Velocity histogram for each interval (100 bins).

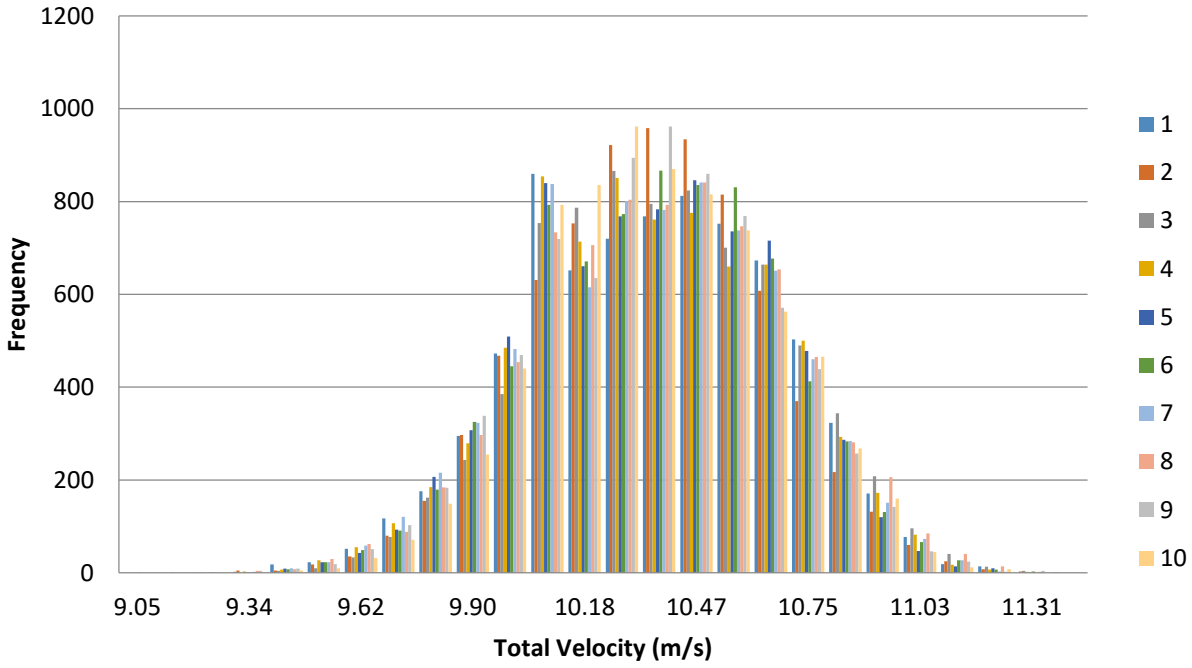
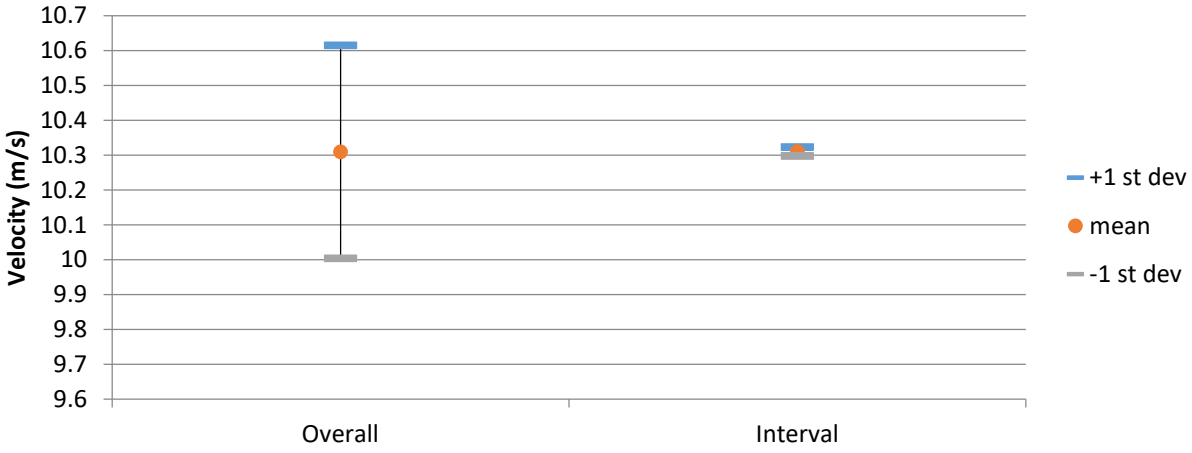
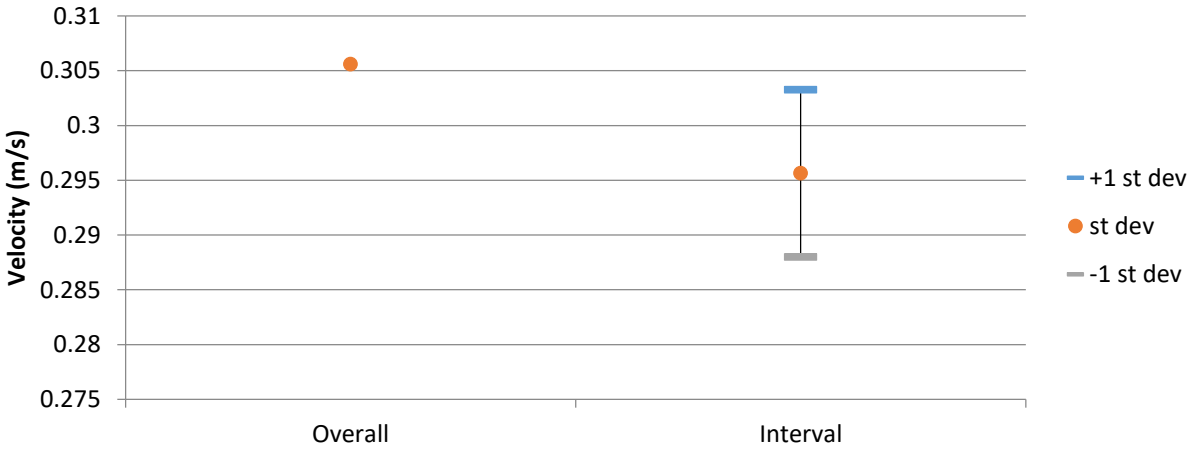


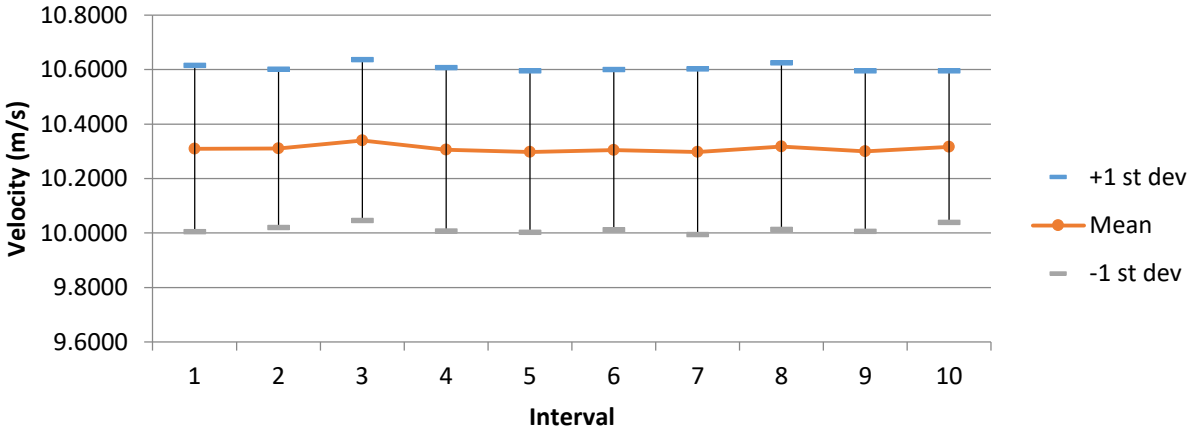
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 75
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E5
First Sample Date: 13-Aug-13
First Sample Time: 10:47:29.953

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.0173	9.3095	10.0913	0.1943
u	10.9000	9.1700	9.9774	0.1889
v	-0.5060	-2.2300	-1.2707	0.2136
w	-0.1280	-1.5900	-0.7684	0.1903

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	10.8589	9.4505	10.1280	0.1918	1.8932
2	10.8223	9.4360	10.1183	0.1916	1.9633
3	11.0173	9.3096	10.0806	0.1979	1.9427
4	10.8695	9.3393	10.0832	0.1959	1.8504
5	10.8211	9.4399	10.0806	0.1865	1.9127
6	10.7314	9.4010	10.0740	0.1927	1.9984
7	10.8337	9.3604	10.0837	0.2015	1.9025
8	10.7423	9.3974	10.0968	0.1921	1.9117
9	10.7701	9.3754	10.0886	0.1929	1.9126
10	10.8919	9.3095	10.0791	0.1928	1.9181
		Average	10.0913	0.1936	1.9206
		St Dev	0.0180	0.0041	0.0382

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.9658	-1.4858	-0.9944	0.1875	0.1774	0.1766	1.8815	1.7797	1.7718
2	9.9970	-1.2245	-0.9370	0.1873	0.1698	0.1925	1.8734	1.6990	1.9257
3	10.0102	-1.0142	-0.5913	0.1924	0.1623	0.1039	1.9219	1.6212	1.0382
4	9.9756	-1.2823	-0.6780	0.1899	0.2027	0.1271	1.9041	2.0315	1.2746
5	9.9898	-1.1131	-0.7485	0.1807	0.1340	0.0869	1.8087	1.3418	0.8696
6	9.9864	-1.1307	-0.6741	0.1861	0.1364	0.0825	1.8634	1.3660	0.8261
7	9.9774	-1.3053	-0.6345	0.1935	0.1443	0.0913	1.9394	1.4462	0.9149
8	9.9811	-1.3555	-0.6721	0.1858	0.1581	0.1036	1.8611	1.5843	1.0378
9	9.9540	-1.3539	-0.8996	0.1881	0.1487	0.1901	1.8901	1.4939	1.9094
10	9.9370	-1.4419	-0.8544	0.1871	0.1438	0.1319	1.8829	1.4473	1.3269

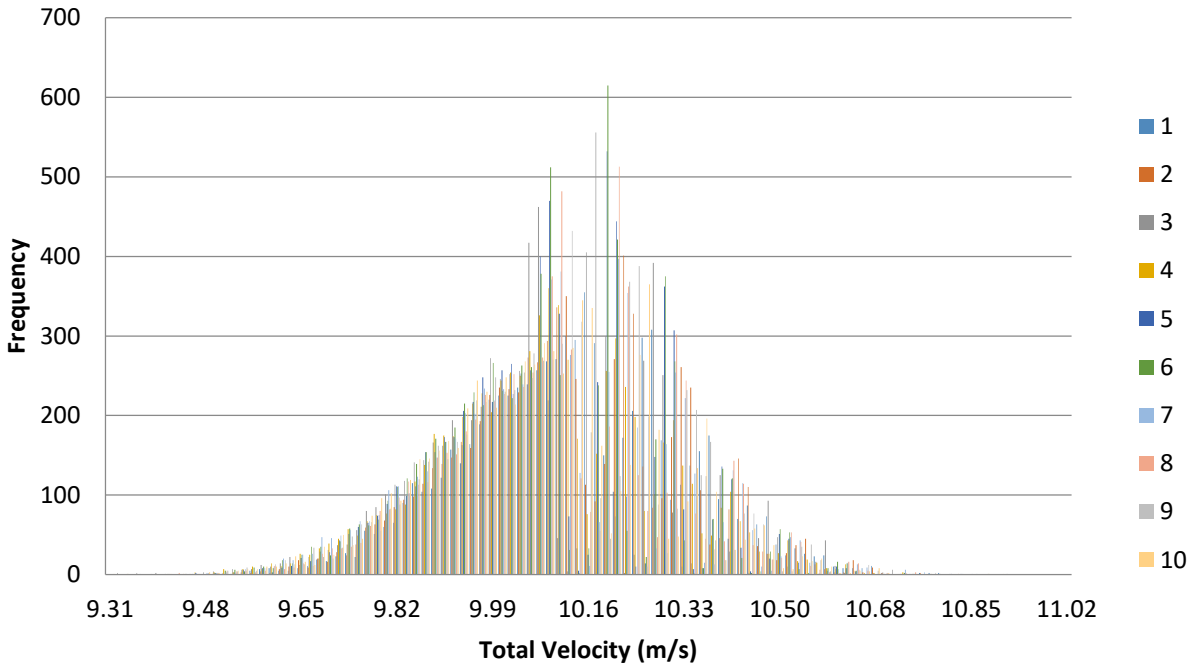


Figure 1. Velocity histogram for each interval (100 bins).

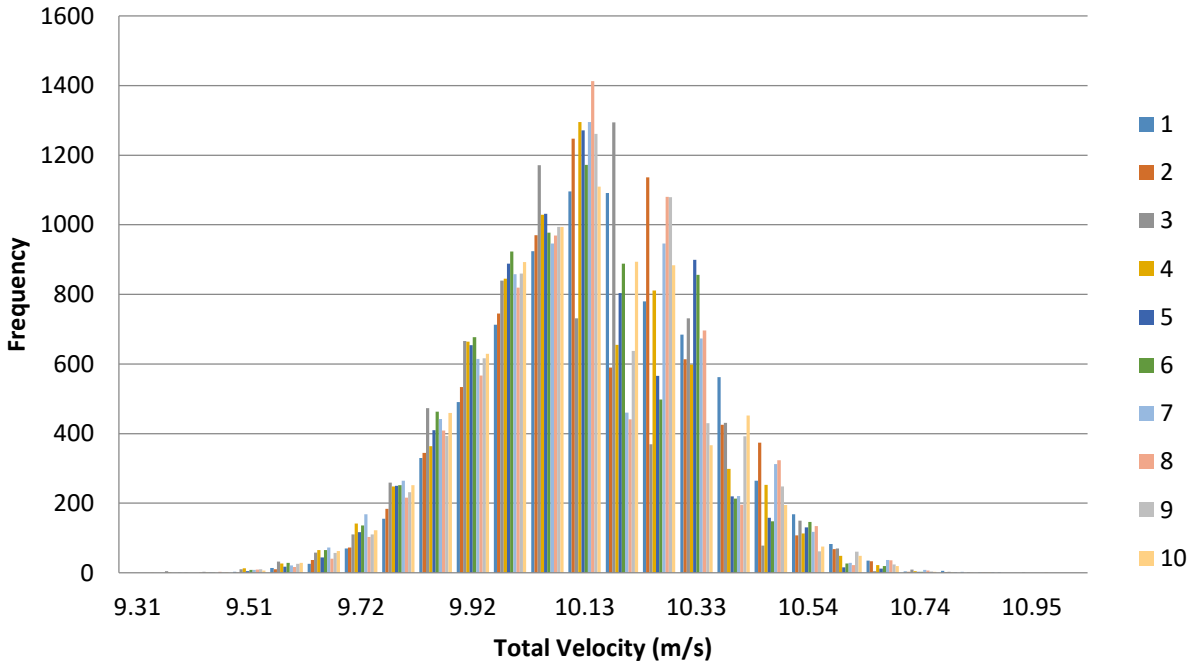
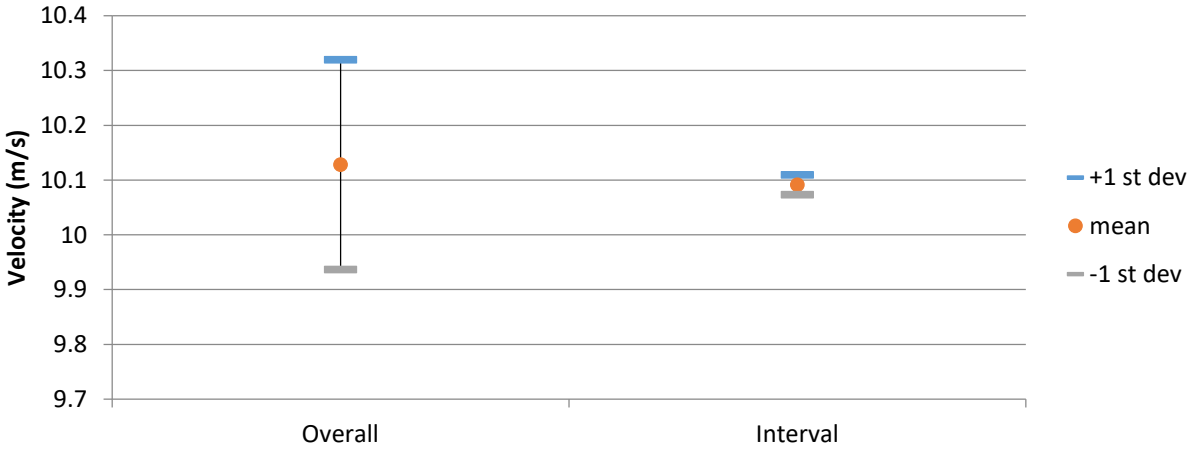
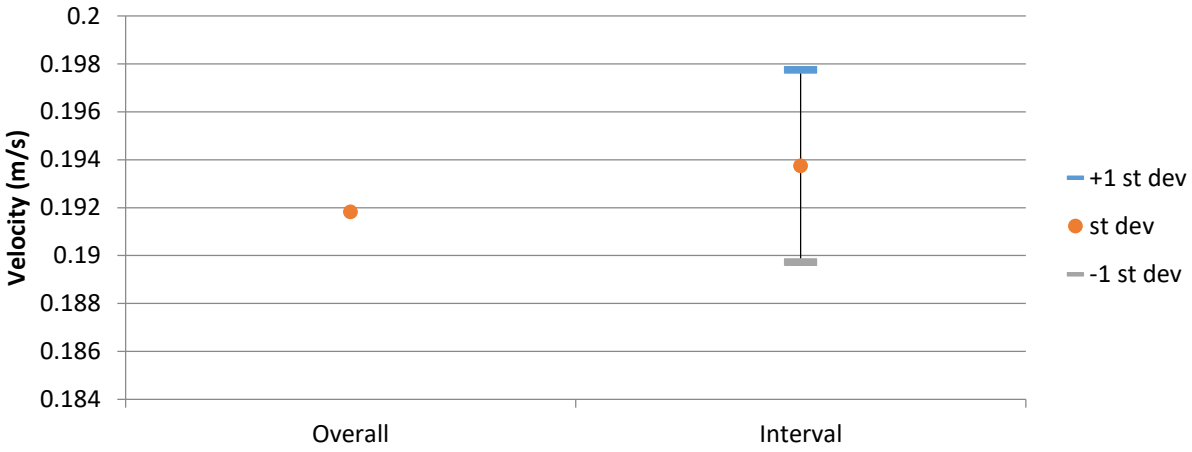


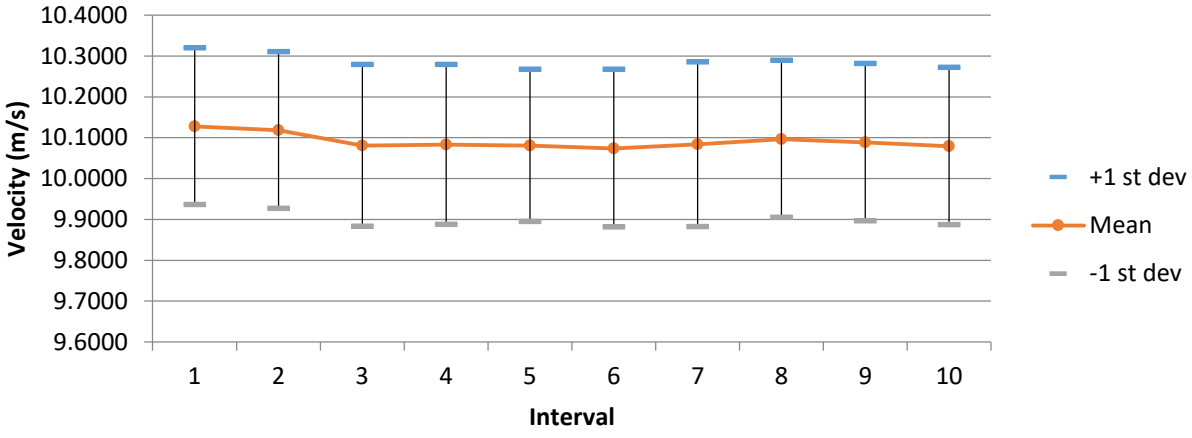
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 76
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: D5
First Sample Date: 13-Aug-13
First Sample Time: 10:49:13.359

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.4770	7.8718	9.8930	0.2957
u	11.0000	7.3700	9.4096	0.2899
v	0.7490	-6.6200	-2.8321	0.7865
w	2.6300	-3.8700	-0.6138	0.5642

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	10.7580	8.8723	9.8682	0.2645	2.7671
2	11.1257	8.9209	9.9679	0.2758	2.4647
3	10.7359	8.9838	9.8449	0.2427	2.5558
4	10.8155	8.9630	9.9160	0.2534	2.8500
5	10.9842	8.8523	9.8973	0.2821	2.5731
6	10.9205	8.7519	10.0137	0.2577	4.1723
7	12.4770	7.8718	10.0685	0.4201	2.5981
8	10.8247	8.8038	9.8329	0.2555	2.5285
9	10.6096	8.6620	9.7382	0.2462	2.5603
10	10.8209	8.8434	9.7820	0.2504	2.7781
		Average	9.8930	0.2748	2.7848
		St Dev	0.1024	0.0525	0.4775

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.3555	-3.0064	-0.7726	0.2582	0.3143	0.3520	2.7596	3.3594	3.7620
2	9.3024	-3.5209	-0.4772	0.2555	0.3242	0.3271	2.7469	3.4855	3.5165
3	9.3242	-3.1172	-0.4165	0.2334	0.2100	0.2256	2.5027	2.2523	2.4192
4	9.2700	-3.4152	-0.7423	0.2337	0.3588	0.2480	2.5216	3.8710	2.6753
5	9.4442	-2.6650	-0.9143	0.2770	0.6720	0.6131	2.9334	7.1155	6.4917
6	9.3375	-3.3504	-1.2245	0.2527	0.3598	0.4848	2.7061	3.8532	5.1918
7	9.5251	-2.8821	-0.4906	0.3511	1.0139	1.0606	3.6865	10.6440	11.1350
8	9.5396	-2.2030	-0.4436	0.2900	0.6711	0.4042	3.0401	7.0345	4.2372
9	9.3940	-2.5307	-0.2496	0.2417	0.2879	0.1925	2.5725	3.0645	2.0489
10	9.6030	-1.6301	-0.4062	0.2783	0.7142	0.3487	2.8981	7.4374	3.6308

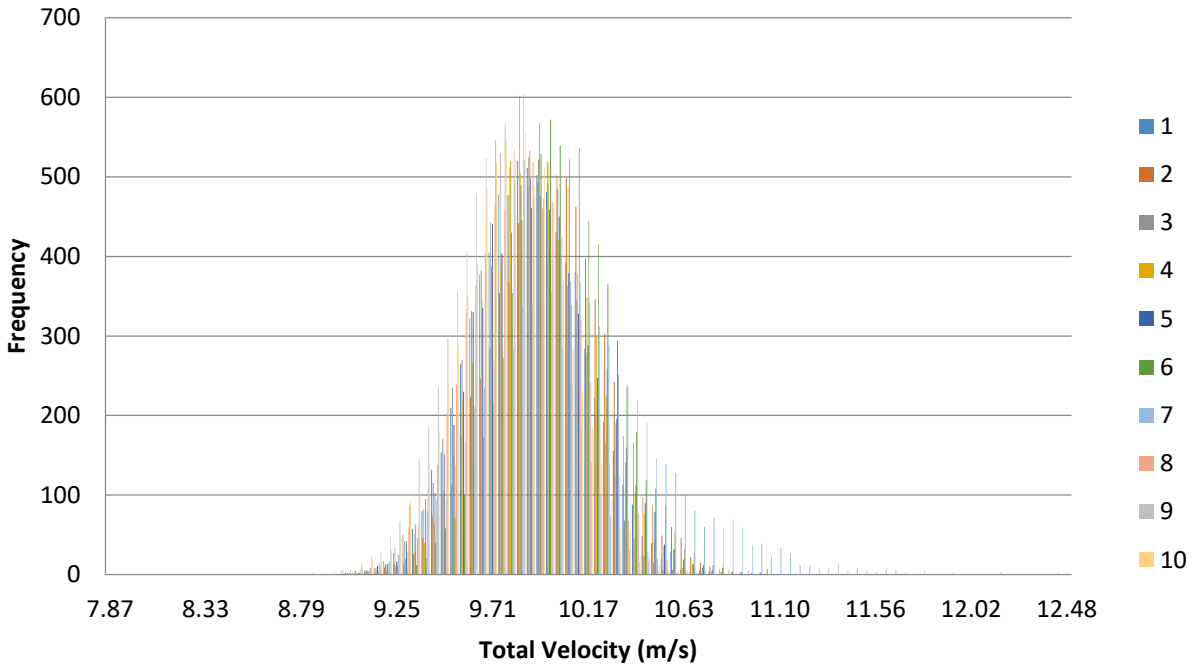


Figure 1. Velocity histogram for each interval (100 bins).

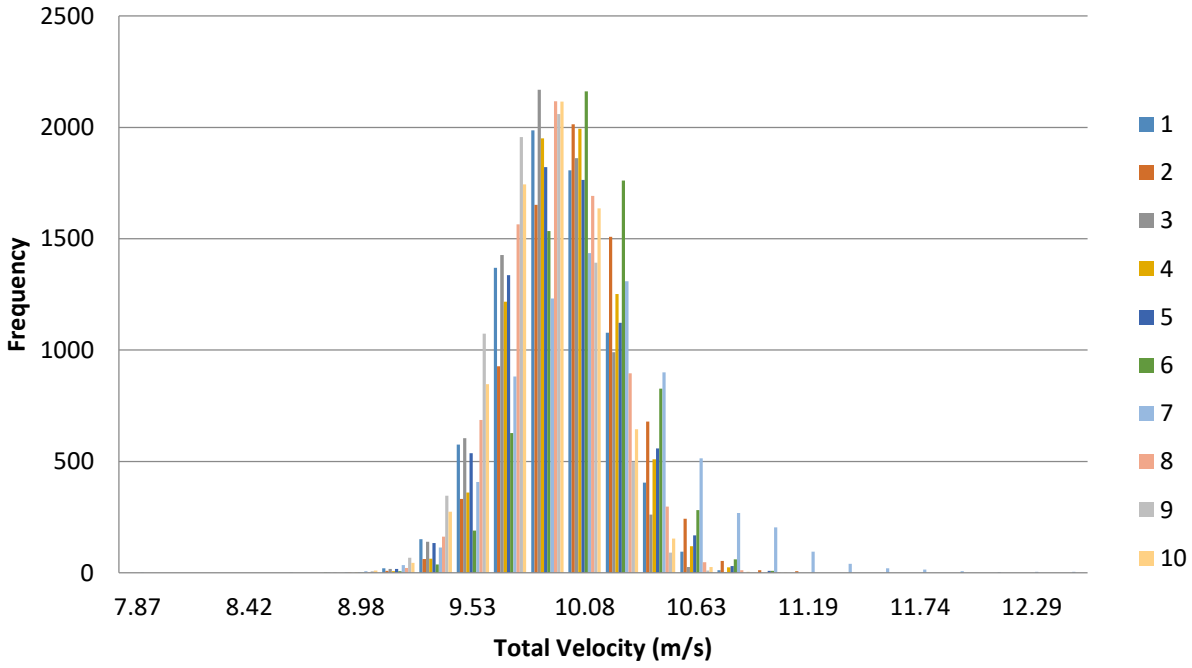
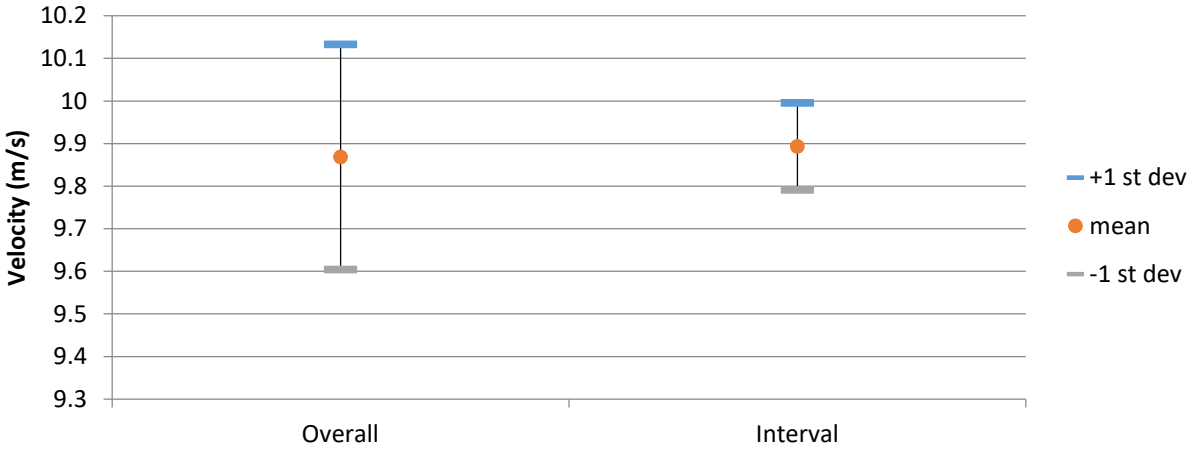
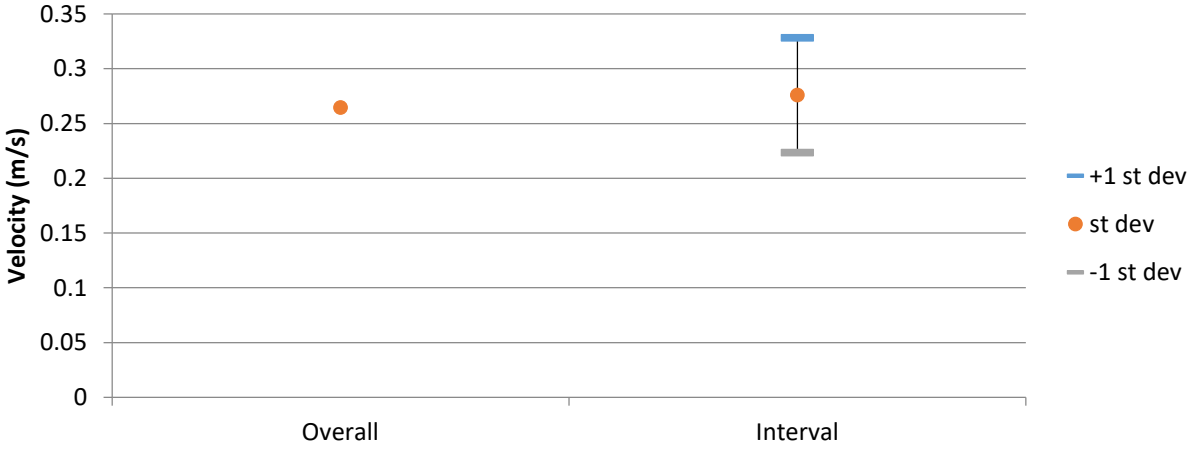


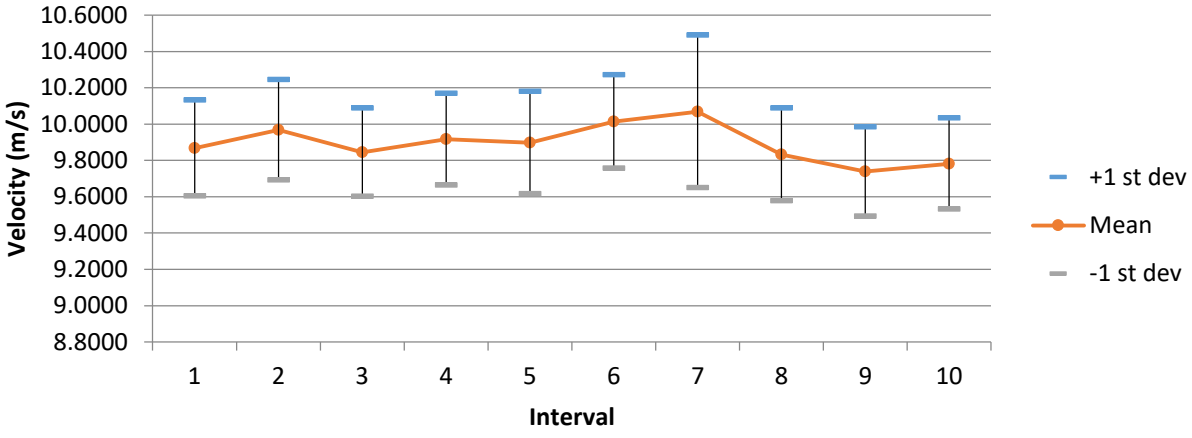
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 77
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: D4
First Sample Date: 13-Aug-13
First Sample Time: 10:50:34.890

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.6181	8.7593	10.0871	0.3124
u	11.3000	8.5000	9.8933	0.3273
v	1.6500	-4.0900	-1.1507	0.8460
w	0.6210	-4.4500	-1.1890	0.6389

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.6181	8.9722	10.0710	0.3369	2.8713
2	11.1032	8.8120	10.1619	0.2918	3.1378
3	11.2084	8.8321	10.1653	0.3190	2.9407
4	11.0094	8.9482	10.0423	0.2953	2.9016
5	11.2547	8.8125	10.0842	0.2926	3.1327
6	11.1251	8.7593	10.0652	0.3153	3.1289
7	11.2239	8.9731	10.0717	0.3151	2.9777
8	10.9971	8.8714	10.0037	0.2979	3.0763
9	11.0636	8.8390	10.0257	0.3084	2.8814
10	11.1085	8.9949	10.1798	0.2933	3.0391
		Average	10.0871	0.3066	3.0088
		St Dev	0.0615	0.0150	0.1020

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.9308	-0.8064	-1.2257	0.3508	0.5896	0.5440	3.5322	5.9376	5.4781
2	9.8904	-1.0289	-1.7139	0.3186	1.0311	0.6081	3.2213	10.4250	6.1485
3	9.8336	-1.4221	-1.7168	0.3367	0.9427	0.8732	3.4235	9.5860	8.8799
4	9.8583	-1.4526	-1.0206	0.2848	0.5038	0.5109	2.8891	5.1104	5.1825
5	10.0043	-0.1788	-1.0517	0.3016	0.4596	0.5006	3.0149	4.5935	5.0036
6	9.8941	-1.0856	-1.2851	0.3319	0.6740	0.3458	3.3542	6.8126	3.4953
7	9.8229	-1.7400	-1.2033	0.3028	0.4553	0.5240	3.0827	4.6354	5.3344
8	9.7591	-1.8338	-1.0321	0.2941	0.3543	0.5329	3.0139	3.6305	5.4603
9	9.8245	-1.7237	-0.7994	0.3051	0.4159	0.4620	3.1057	4.2329	4.7023
10	10.1152	-0.2356	-0.8415	0.2911	0.4544	0.5848	2.8780	4.4926	5.7816

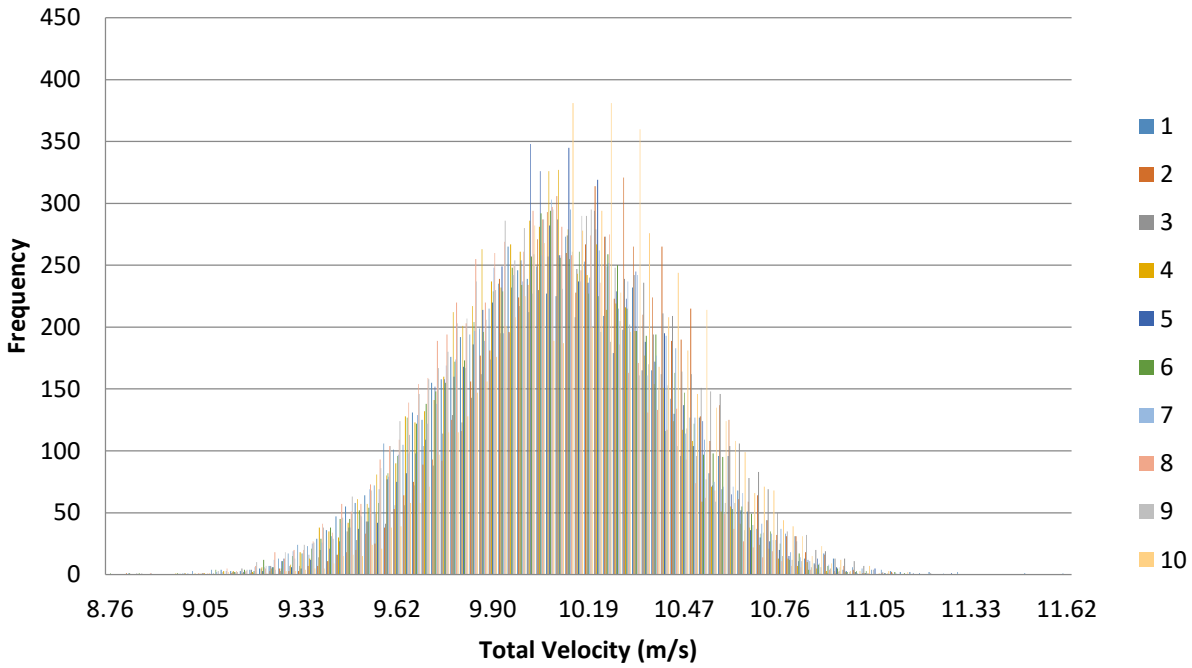


Figure 1. Velocity histogram for each interval (100 bins).

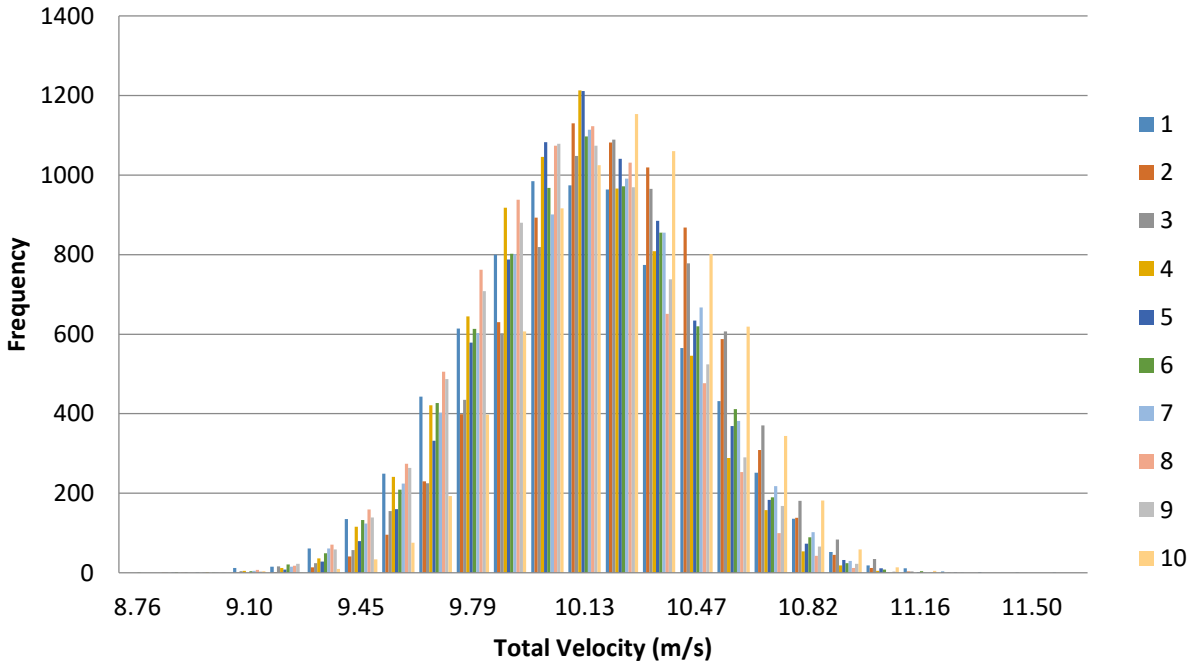
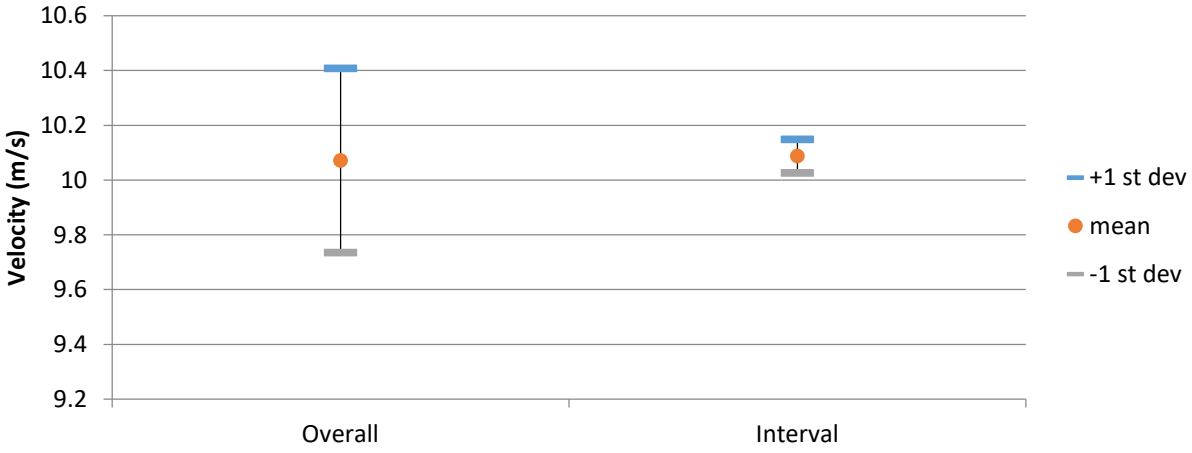
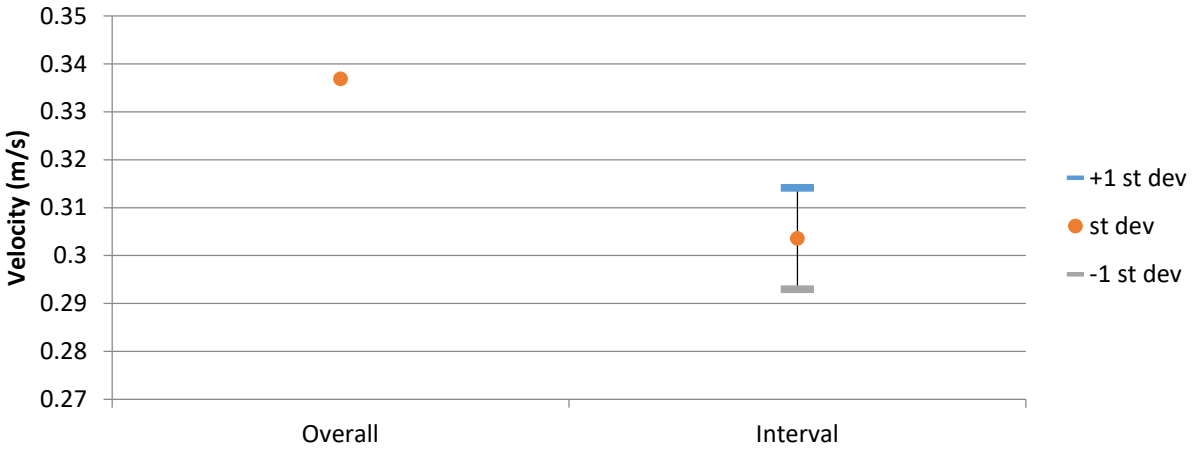


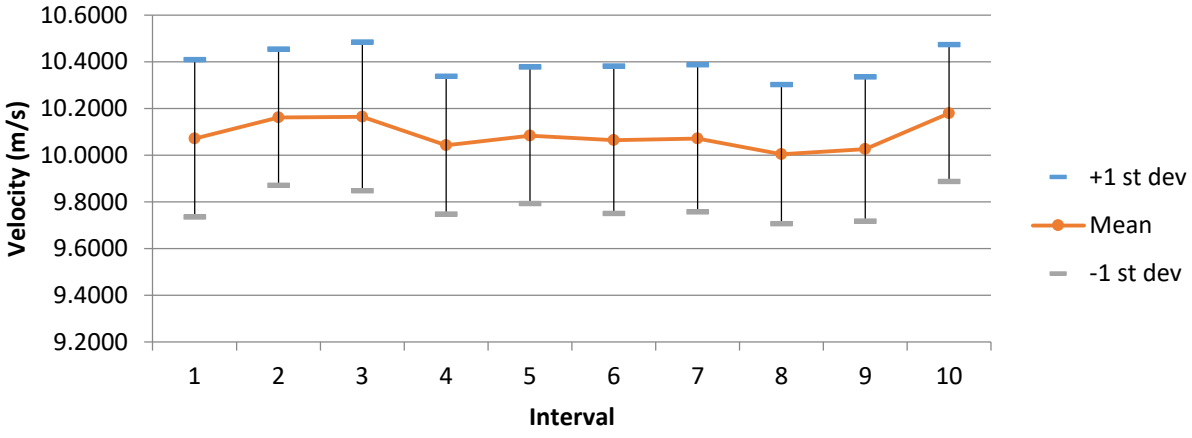
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 78
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: D3
First Sample Date: 13-Aug-13
First Sample Time: 10:52:04.250

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.7353	9.0929	10.7682	0.2777
u	11.8000	8.0800	10.2352	0.3485
v	2.3900	-5.5100	-1.6100	0.9062
w	0.5250	-6.4900	-2.6236	0.9246

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.5570	10.2488	10.9221	0.1792	2.8821
2	12.0859	10.0168	10.8729	0.3134	3.3791
3	12.7353	9.9862	10.8637	0.3671	2.0511
4	12.0134	9.8701	10.6552	0.2185	2.5962
5	12.4161	9.8596	10.7415	0.2789	2.4912
6	11.9990	9.0929	10.6369	0.2650	2.0832
7	11.6258	10.0211	10.7648	0.2243	2.1541
8	11.6827	9.9055	10.6627	0.2297	1.9805
9	11.7209	9.7723	10.8276	0.2144	2.4913
10	11.8470	9.7733	10.7347	0.2674	2.3754
		Average	10.7682	0.2558	2.4484
		St Dev	0.1002	0.0549	0.4101

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.2981	-1.7523	-3.1689	0.1655	0.2760	0.2406	1.6072	2.6804	2.3368
2	9.9989	-2.0082	-3.2852	0.4969	1.6320	0.7775	4.9691	16.3219	7.7756
3	10.2631	-1.3589	-3.0683	0.4363	0.9466	0.6911	4.2508	9.2238	6.7343
4	10.1225	-1.4949	-2.8013	0.2853	0.6548	0.7239	2.8188	6.4692	7.1511
5	10.3196	-1.1840	-2.4806	0.3023	0.9595	0.6287	2.9295	9.2974	6.0925
6	10.0994	-1.5188	-2.4583	0.4071	0.8007	1.4355	4.0310	7.9286	14.2139
7	10.3629	-1.4745	-2.3502	0.2321	0.4663	0.7565	2.2393	4.4997	7.3005
8	10.4103	-1.2765	-1.6509	0.2692	0.6777	0.6956	2.5857	6.5098	6.6815
9	10.3079	-1.5207	-2.8556	0.2239	0.4113	0.5867	2.1719	3.9900	5.6919
10	10.1690	-2.5104	-2.1166	0.2824	0.5913	0.8284	2.7770	5.8150	8.1467

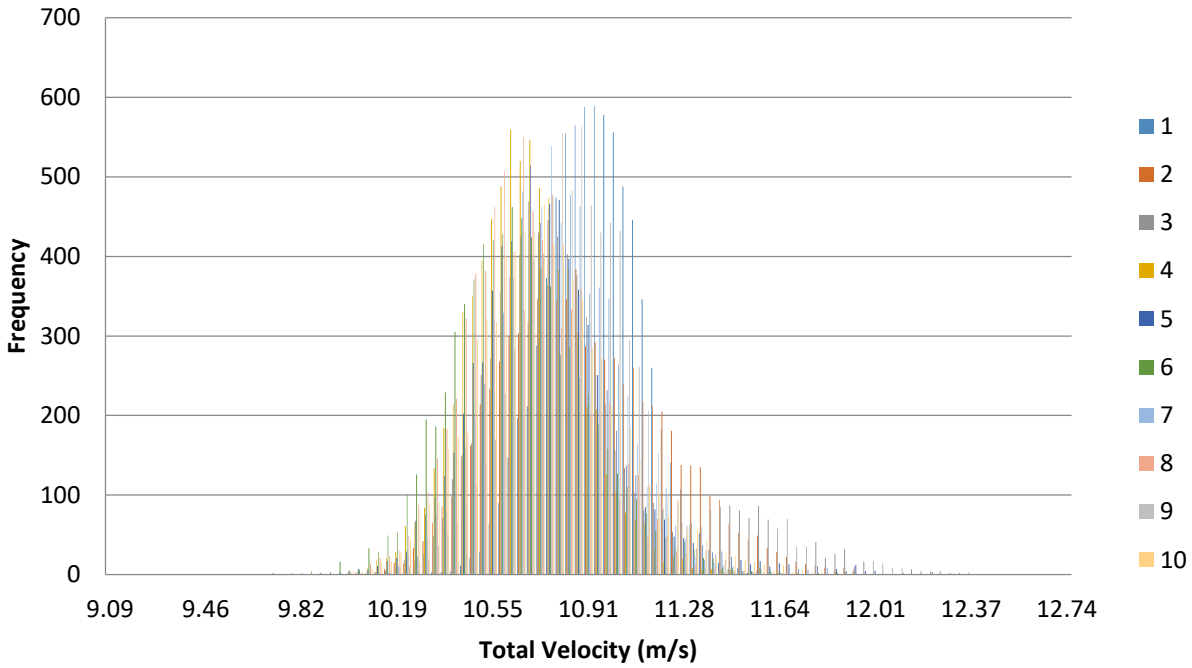


Figure 1. Velocity histogram for each interval (100 bins).

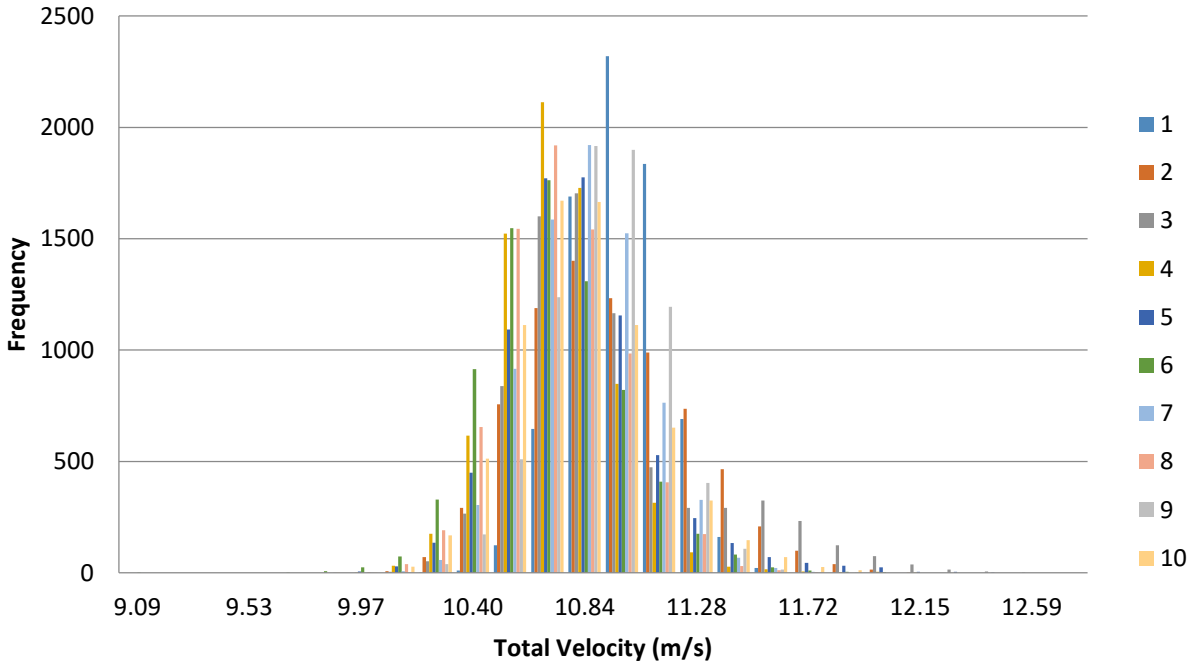
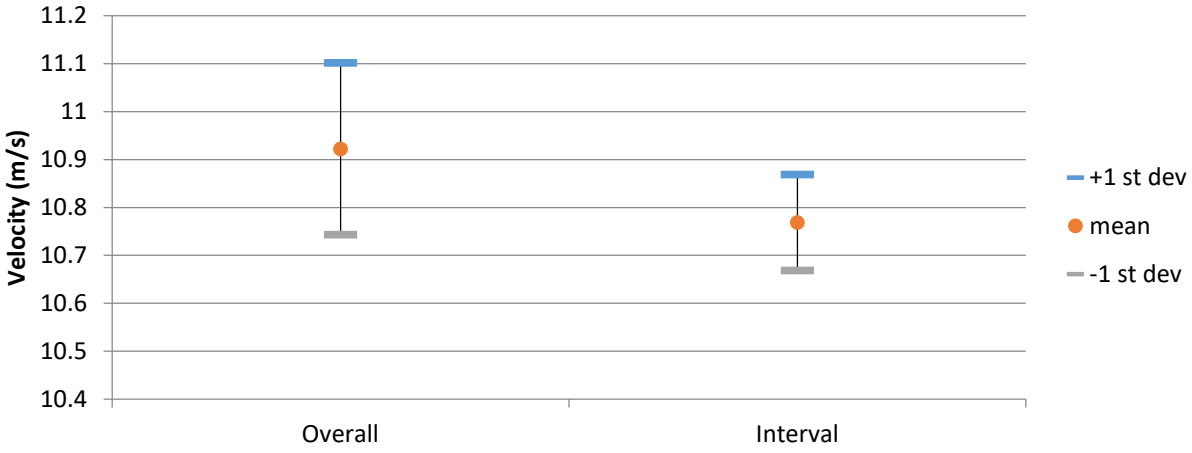
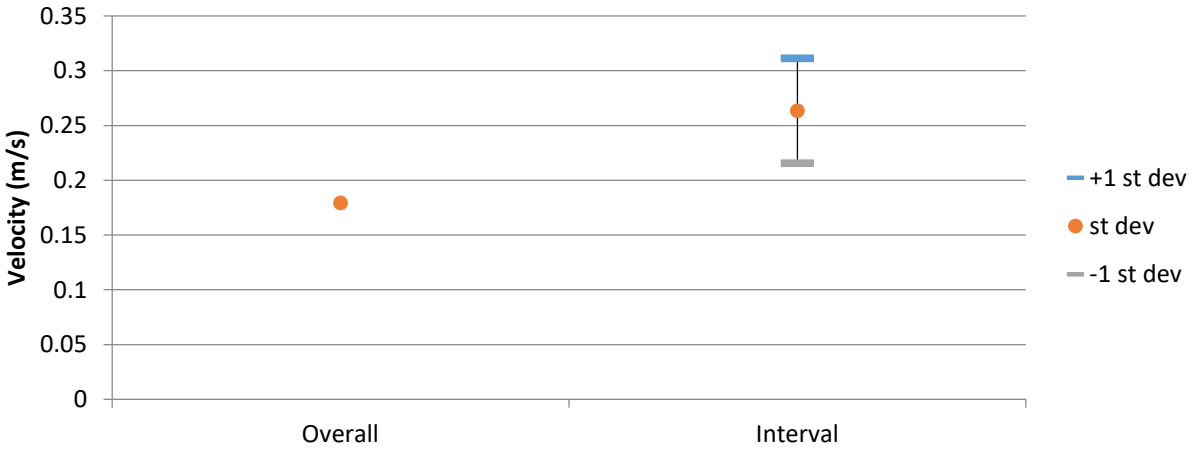


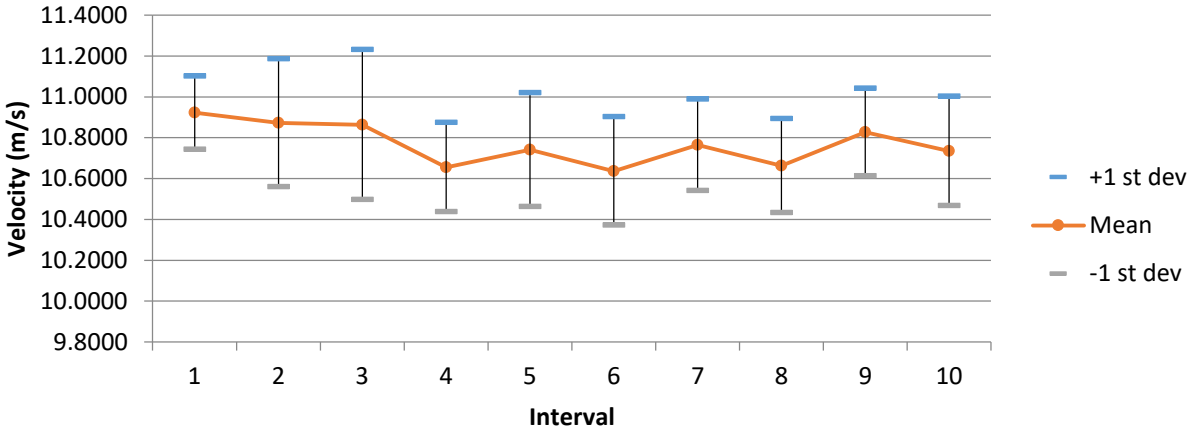
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 79
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 13-Aug-13 First Sample Time: 10:53:39.359

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	0.2758	12.1846	3.5695	3.5571
u	0.2260	11.5000	3.3731	3.4310
v	-1.8000	3.7200	0.1556	0.3969
w	-5.8700	1.7300	-0.9336	1.0916

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)	# Zero Values	% Zero Values
1	12.1846	10.3718	11.0581	0.2095	1.8950	0	0.00 %
2	11.3111	7.7583	9.6501	0.9840	10.1972	0	0.00 %
3	8.2780	5.4748	7.1218	0.7355	10.3275	0	0.00 %
4	5.9900	2.1694	4.0754	0.8570	21.0280	44	0.35 %
5	3.6150	1.9429	2.4570	0.1982	8.0674	2	0.02 %
6	2.5093	1.3967	1.9344	0.1474	7.6188	0	0.00 %
7	1.8913	1.1259	1.4712	0.1298	8.8259	0	0.00 %
8	1.7260	0.3196	1.2175	0.1071	8.7934	16	0.13 %
9	1.3359	0.6327	1.0270	0.0899	8.7577	0	0.00 %
10	1.2853	0.3943	0.8646	0.1048	12.1203	12	0.10 %
11	1.4758	0.3434	0.8459	0.1280	15.1277	1295	10.36 %
12	1.1519	0.2758	0.7830	0.1237	15.7987	202	1.62 %
		Average	3.5422	0.3179	9.7631		
		St Dev	3.5205	0.318179	4.5296		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.5857	0.5356	-3.0497	0.2495	0.5250	0.5840	2.3567	4.9591	5.5167
2	9.2804	0.0274	-2.5286	1.0151	0.5173	0.5242	10.9385	5.5736	5.6482
3	6.8050	0.2532	-1.9835	0.7159	0.3975	0.5333	10.5201	5.8410	7.8365
4	3.7415	0.5925	-1.1837	0.9117	0.5197	0.7003	24.3681	13.8907	18.7178
5	2.2175	0.2132	-0.9342	0.2140	0.3149	0.3093	9.6521	14.2006	13.9472
6	1.7877	-0.1202	-0.5647	0.1542	0.2594	0.3791	8.6255	14.5127	21.2081
7	1.3747	-0.0814	-0.4842	0.1158	0.1251	0.1462	8.4270	9.1032	10.6346
8	1.1267	0.0148	-0.3315	0.0905	0.2157	0.2440	8.0356	19.1489	21.6553
9	0.9981	0.0039	-0.1572	0.0955	0.1130	0.1414	9.5708	11.3218	14.1640
10	0.8309	-0.0062	-0.1272	0.1153	0.1221	0.1536	13.8784	14.6966	18.4846
11	0.7523	0.1911	-0.0349	0.1232	0.2309	0.2444	16.3791	30.6885	32.4875
12	0.6604	0.2498	0.2883	0.1224	0.1461	0.1020	18.5354	22.1165	15.4383

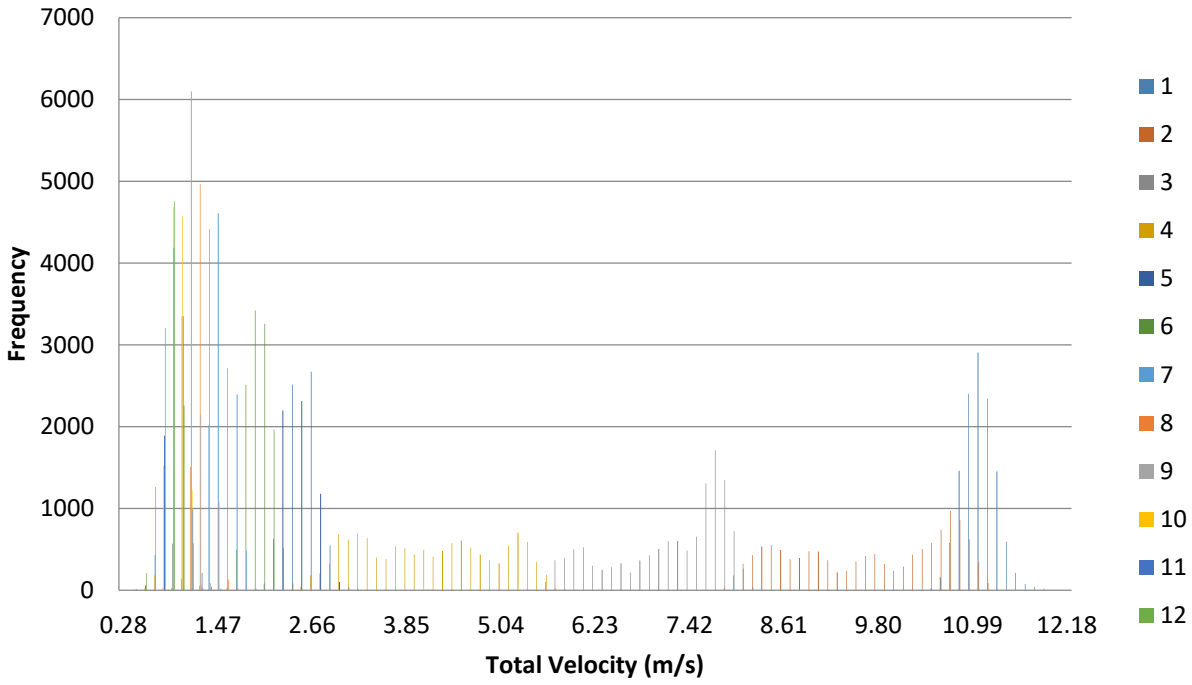


Figure 1. Velocity histogram for each interval (100 bins).

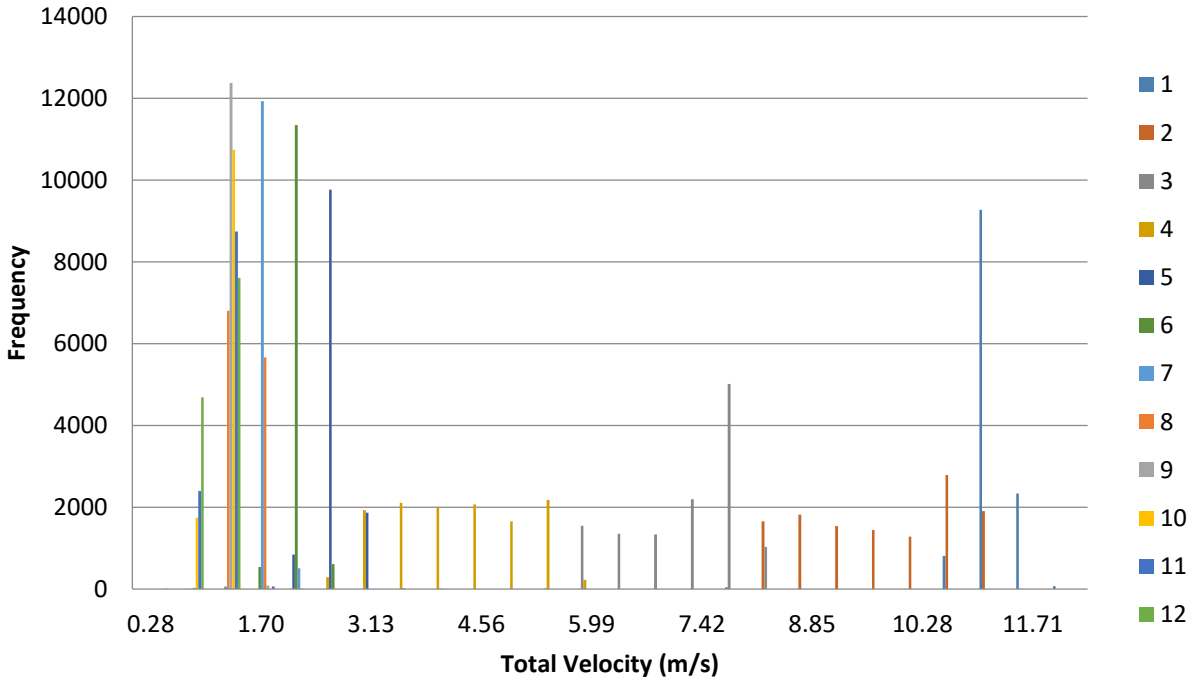
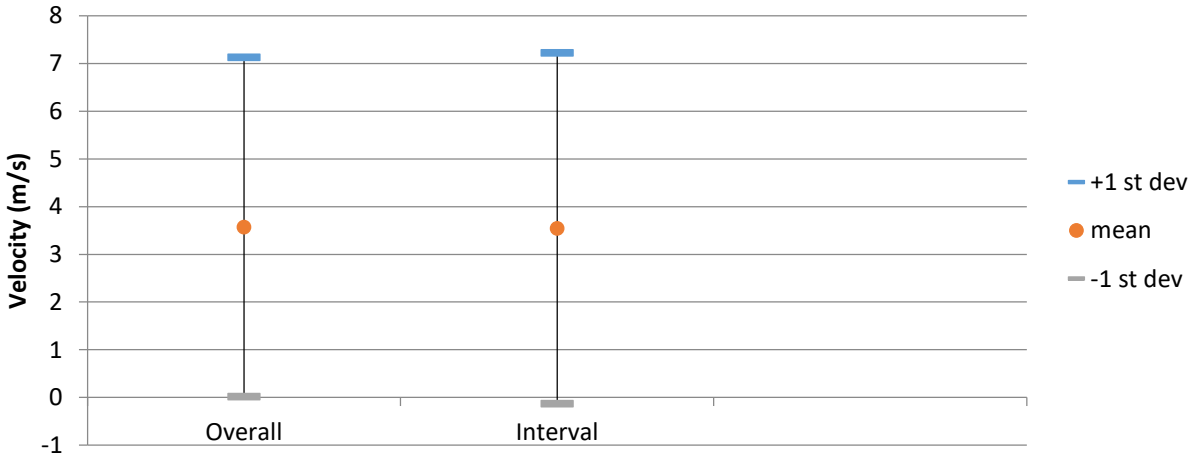
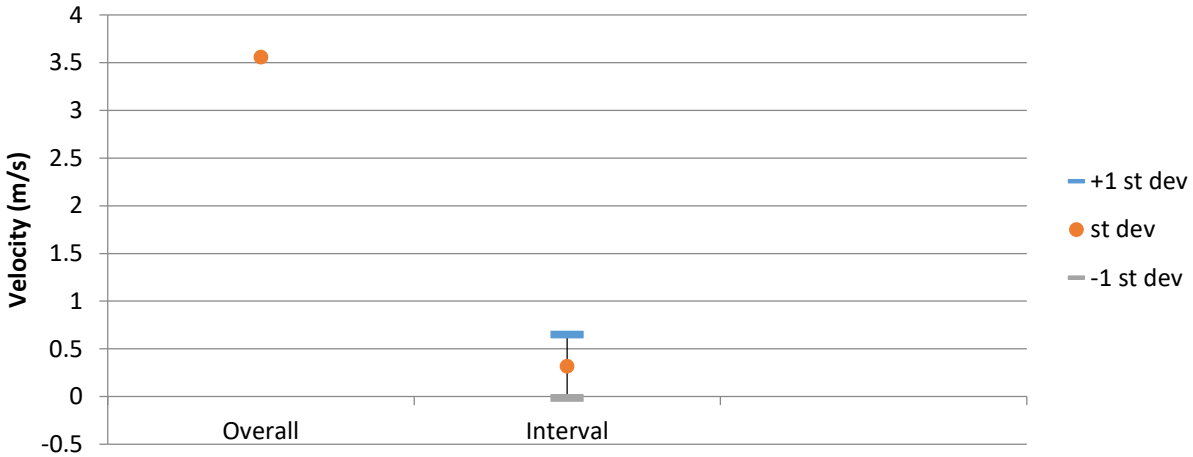


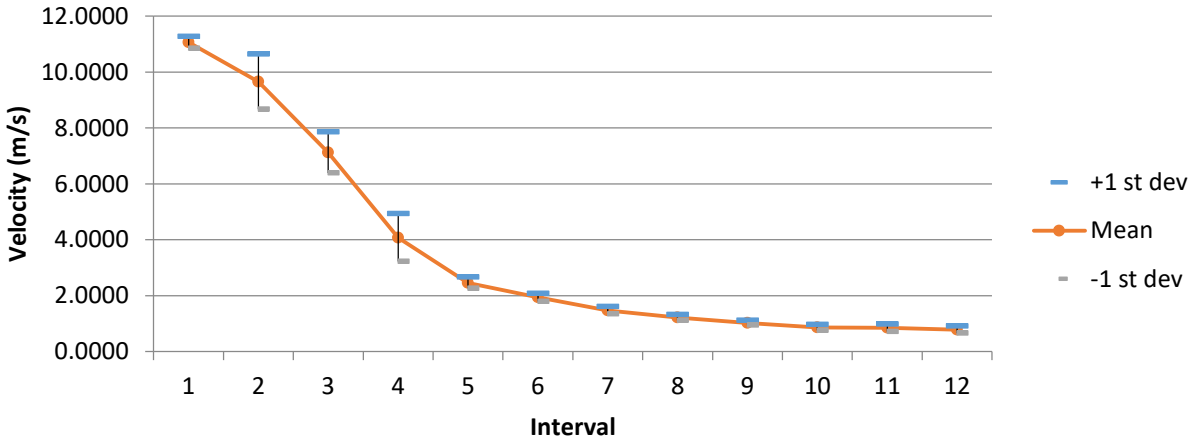
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 80
Blockage Condition: All Buildings
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 14-Aug-13 First Sample Time: 07:34:45.421

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.1677	6.2951	5.7329	0.0889
u	5.0600	6.1000	5.5772	0.1188
v	-2.0100	1.2300	-0.6753	0.4856
w	-2.3600	0.6510	-0.8618	0.5657

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	6.0701	5.3774	5.7404	0.0834	1.4524
2	6.2431	5.3529	5.8030	0.0907	1.5629
3	6.1735	5.4211	5.7500	0.0836	1.4538
4	6.2951	5.4917	5.8095	0.0890	1.5316
5	6.1689	5.3634	5.7210	0.0825	1.4420
6	5.9600	5.3958	5.7103	0.0679	1.1888
7	5.9584	5.4504	5.7119	0.0603	1.0556
8	6.0170	5.4098	5.6879	0.0711	1.2496
9	6.1270	5.1677	5.7010	0.0872	1.5291
10	6.0448	5.4475	5.7187	0.0725	1.2681
11	6.0972	5.3873	5.7281	0.0918	1.6033
12	6.0199	5.3758	5.7134	0.0863	1.5099
		Average	5.7329	0.0805	1.4039
		St Dev	0.0380	0.0101	0.1644

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.5775	-0.9307	-0.9096	0.0810	0.2676	0.2805	1.4516	4.7987	5.0289
2	5.6776	-0.6064	-0.9223	0.0840	0.2785	0.3813	1.4792	4.9054	6.7160
3	5.6877	-0.6484	-0.3200	0.0858	0.2575	0.3522	1.5092	4.5273	6.1922
4	5.5240	0.1095	-1.7548	0.1257	0.2112	0.3039	2.2756	3.8230	5.5015
5	5.6275	-0.0928	-0.6971	0.1043	0.4973	0.5604	1.8533	8.8375	9.9588
6	5.6767	-0.4181	-0.2762	0.0718	0.3089	0.1906	1.2647	5.4413	3.3575
7	5.6741	-0.5317	-0.1202	0.0701	0.3071	0.1946	1.2349	5.4132	3.4304
8	5.5432	-1.0467	-0.6499	0.0791	0.1953	0.2599	1.4267	3.5241	4.6881
9	5.5145	-1.0136	-0.9322	0.0846	0.2650	0.3535	1.5333	4.8047	6.4099
10	5.4676	-0.7417	-1.4468	0.0678	0.3450	0.2196	1.2405	6.3108	4.0172
11	5.4889	-1.1828	-1.0506	0.0715	0.2935	0.3118	1.3032	5.3463	5.6810
12	5.4679	-1.0000	-1.2621	0.0685	0.2951	0.2621	1.2530	5.3969	4.7929

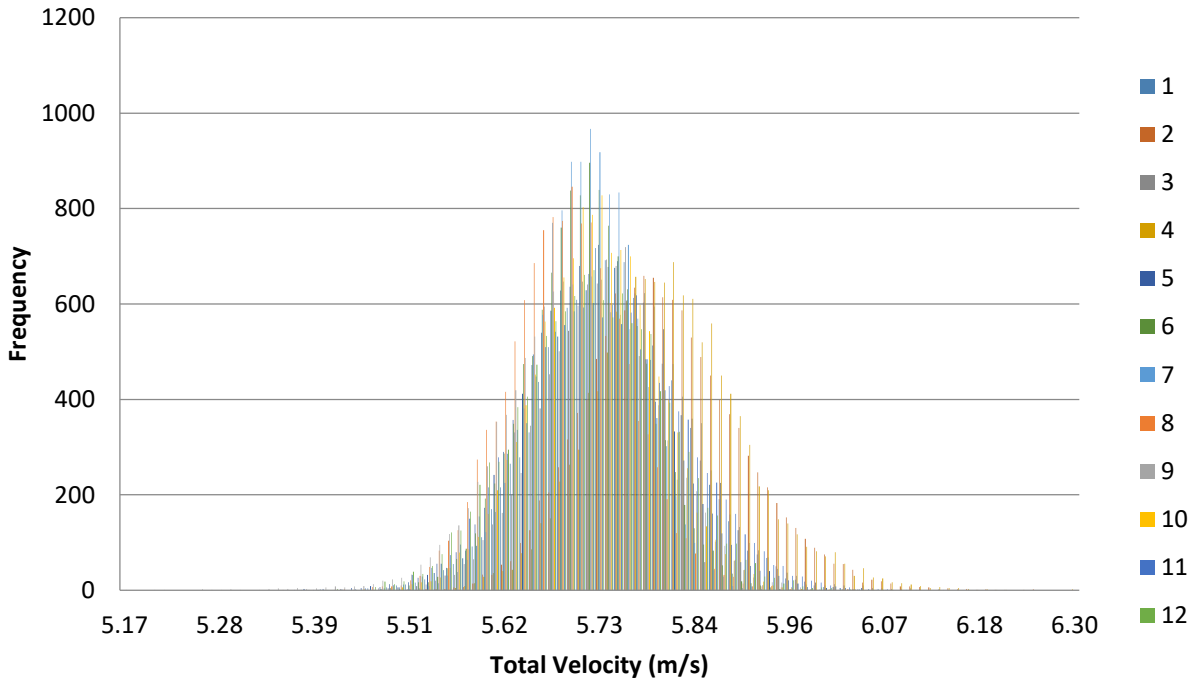


Figure 1. Velocity histogram for each interval (100 bins).

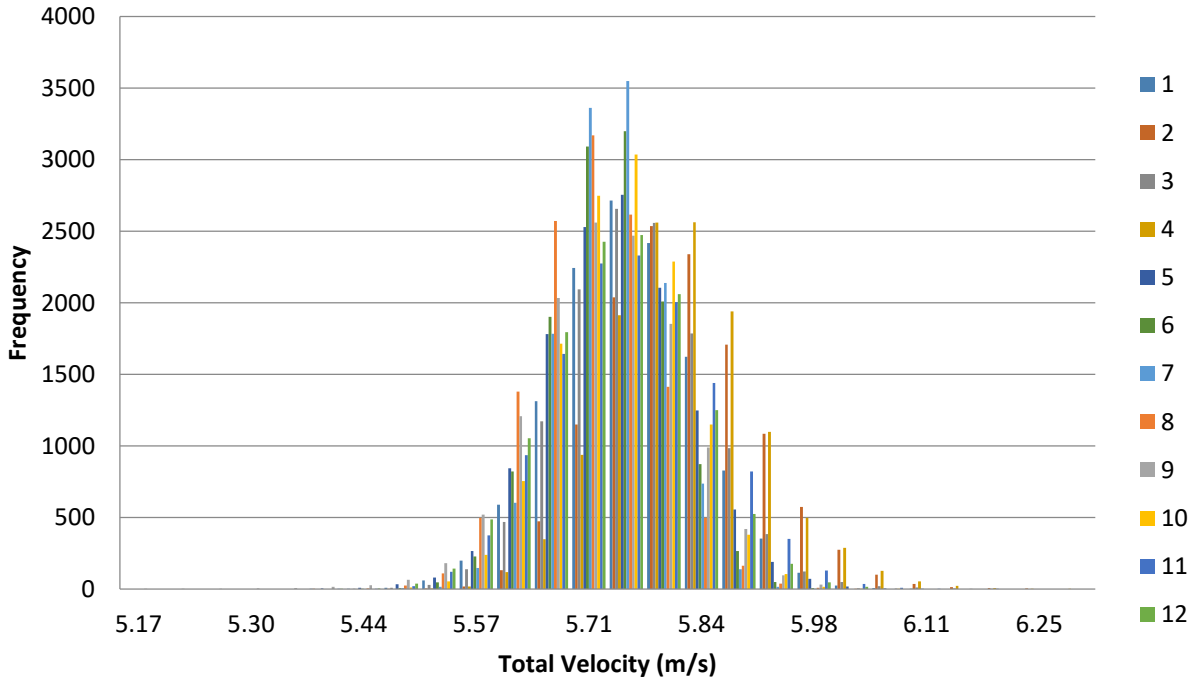
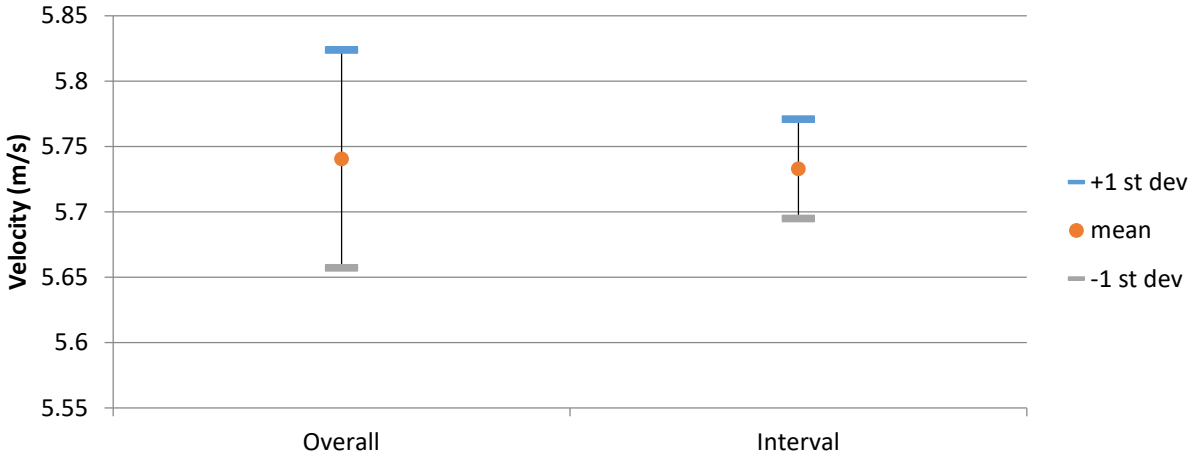
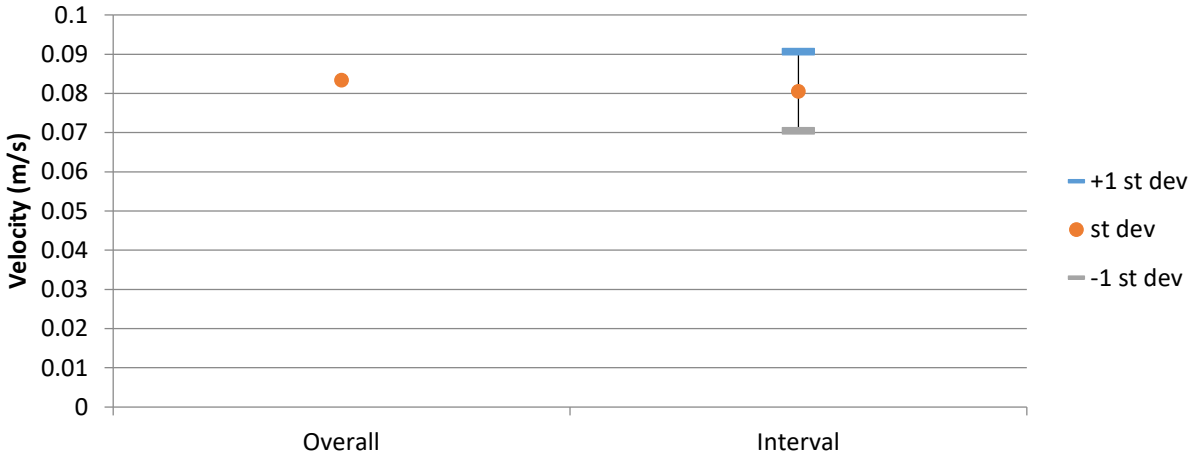


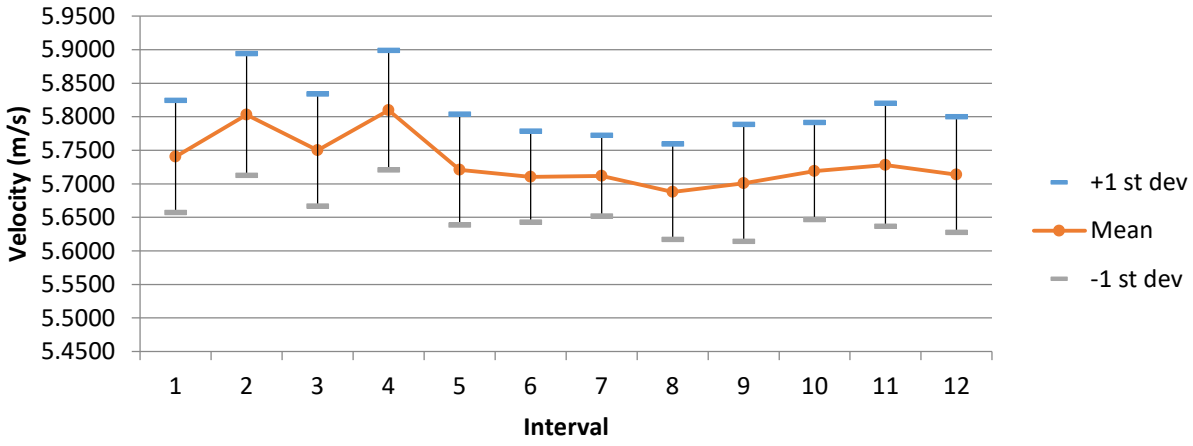
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 81
Blockage Condition: All Buildings
Blower Frequency: 25 Hz
Inlet Probe Location: E1
First Sample Date: 14-Aug-13
First Sample Time: 07:38:20.796

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	8.8811	6.3346	6.8887	0.0842
u	6.6200	4.9000	5.8154	0.1811
v	1.9100	-1.2900	0.0673	0.4689
w	-2.8800	-6.3200	-3.6518	0.2241

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	7.2208	6.5882	6.8542	0.0785	0.9988
2	7.1730	6.6395	6.8914	0.0688	1.0497
3	7.2166	6.5748	6.9057	0.0725	1.0681
4	7.2550	6.6282	6.9292	0.0740	1.1277
5	7.2158	6.6451	6.9383	0.0782	1.0738
6	7.1514	6.6210	6.8934	0.0740	1.0247
7	7.1611	6.3742	6.8927	0.0706	1.4766
8	8.8811	6.3346	6.8569	0.1012	1.1052
9	7.2764	6.5141	6.8646	0.0759	1.3626
10	7.5279	6.4597	6.8610	0.0935	1.1429
		Average	6.8887	0.0787	1.1430
		St Dev	0.0298	0.0104	0.1467

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.9294	0.2604	-3.4200	0.1103	0.1901	0.1232	1.8607	3.2057	2.0782
2	5.7861	-0.5434	-3.6855	0.1578	0.2938	0.1644	2.7272	5.0773	2.8416
3	5.8213	-0.3519	-3.6688	0.1436	0.4157	0.1728	2.4662	7.1406	2.9678
4	5.8041	0.5332	-3.7390	0.1288	0.1788	0.1393	2.2193	3.0807	2.3995
5	5.9743	0.4759	-3.4878	0.1339	0.1656	0.1272	2.2419	2.7712	2.1287
6	5.8847	0.0147	-3.5782	0.1274	0.2357	0.1359	2.1647	4.0054	2.3087
7	5.7105	-0.3732	-3.8329	0.1353	0.1798	0.1525	2.3701	3.1488	2.6709
8	5.6946	0.2899	-3.7787	0.2061	0.3568	0.2564	3.6184	6.2659	4.5027
9	5.7117	-0.1676	-3.7804	0.1916	0.3055	0.2365	3.3548	5.3482	4.1404
10	5.8368	0.5355	-3.5471	0.2032	0.2115	0.2444	3.4821	3.6238	4.1879

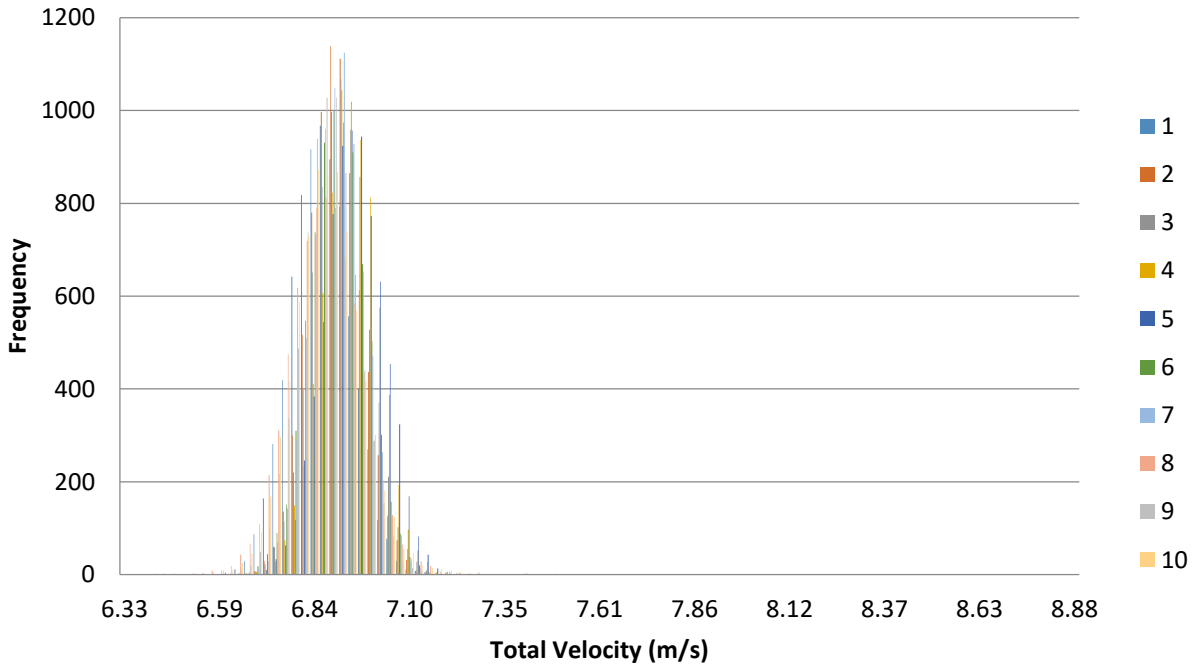


Figure 1. Velocity histogram for each interval (100 bins).

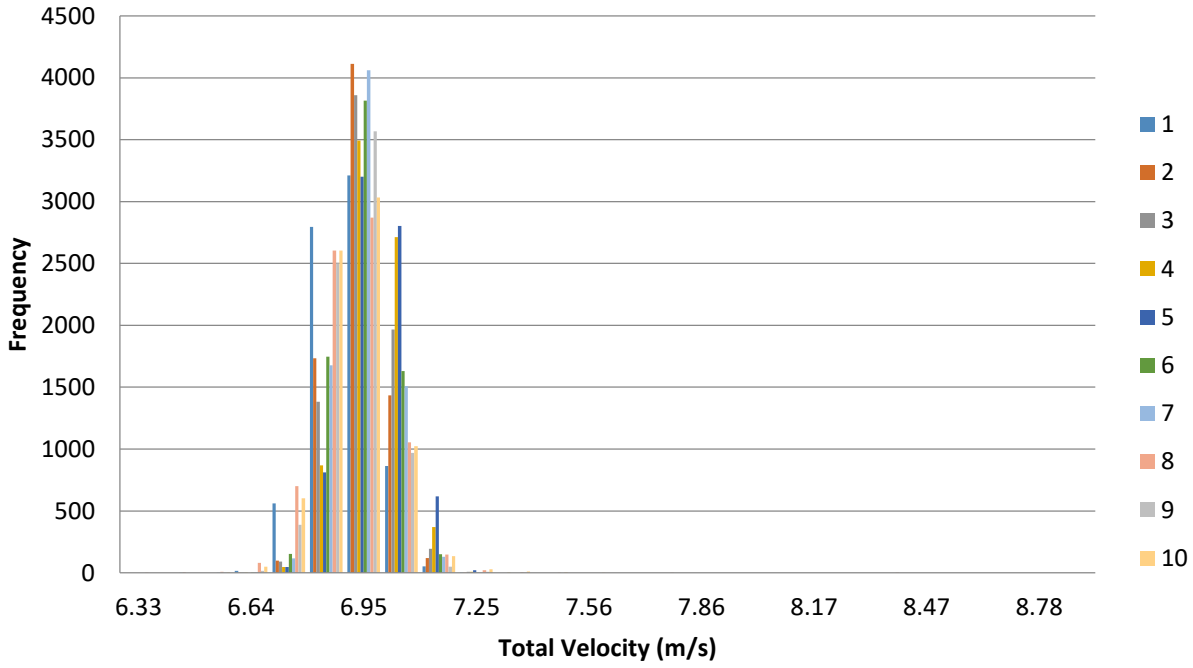
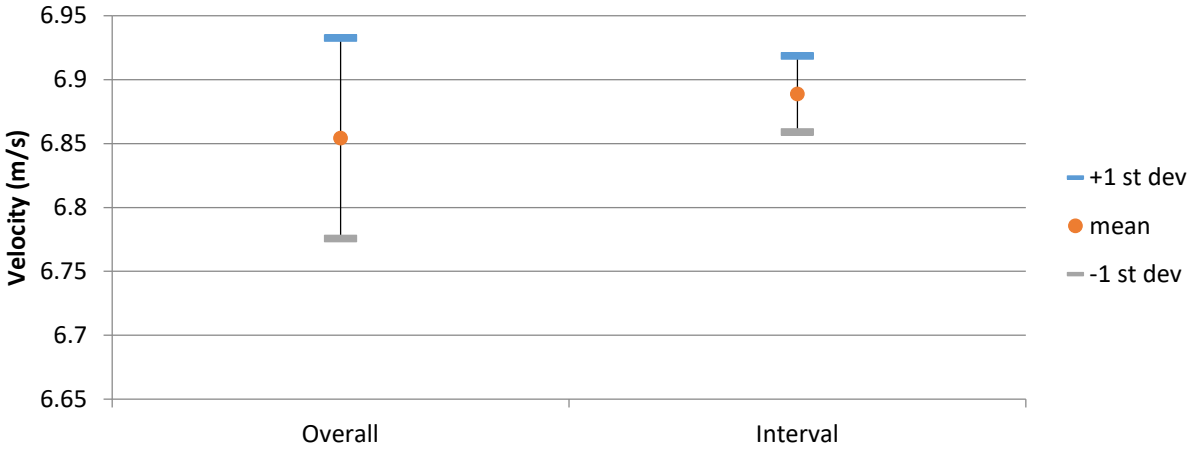
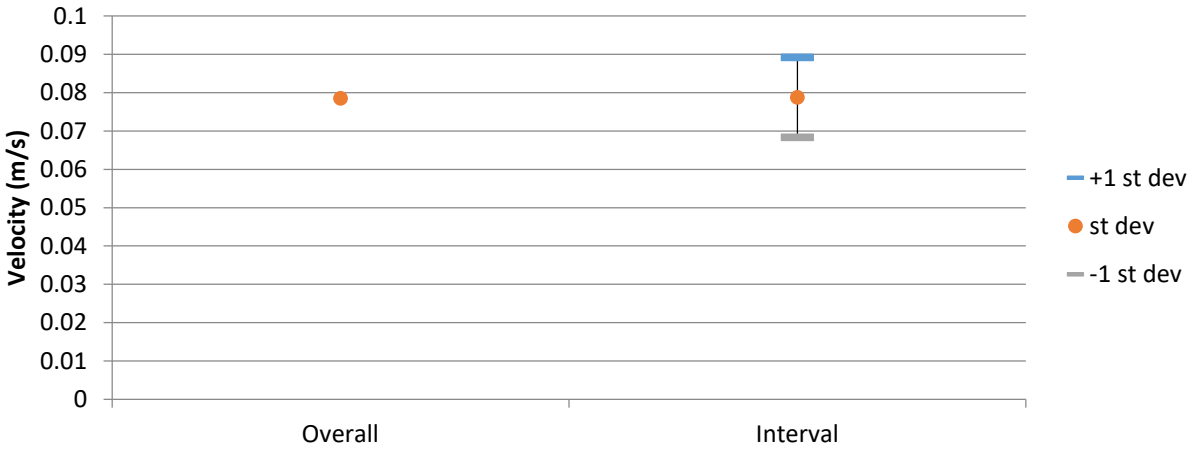


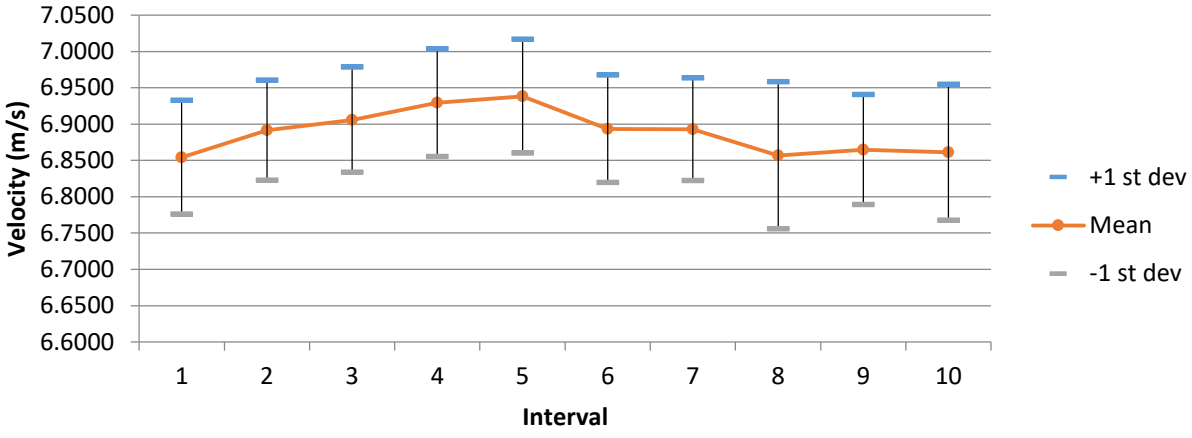
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 82
Blockage Condition: All Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E2
First Sample Date: 14-Aug-13
First Sample Time: 07:40:46.015

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	6.8653	5.7546	6.1893	0.1116
u	6.4700	4.8000	5.5252	0.2234
v	0.6920	-1.5300	-0.2635	0.3694
w	-1.3700	-3.6500	-2.7305	0.2824

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	6.5935	5.8359	6.1684	0.0892	1.7864
2	6.6413	5.7546	6.1923	0.1106	2.3079
3	6.8653	5.8399	6.2261	0.1437	1.2598
4	6.4616	5.8985	6.1484	0.0775	1.6514
5	6.6228	5.7846	6.2097	0.1025	1.5131
6	6.5502	5.9265	6.2031	0.0939	1.5645
7	6.6554	5.8530	6.1714	0.0965	1.1816
8	6.4066	5.8956	6.1291	0.0724	1.2306
9	6.4677	5.9086	6.1461	0.0756	2.0348
10	6.7242	5.9553	6.2980	0.1282	1.5998
		Average	6.1893	0.0990	1.6130
		St Dev	0.0491	0.0232	0.3409

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.4969	-0.2331	-2.7729	0.1635	0.1863	0.1910	2.9750	3.3897	3.4741
2	5.5859	-0.4616	-2.6064	0.1771	0.2583	0.2233	3.1700	4.6233	3.9971
3	5.6261	-0.7023	-2.5220	0.2370	0.3531	0.3132	4.2124	6.2754	5.5665
4	5.3650	-0.8610	-2.8592	0.1504	0.2148	0.2032	2.8035	4.0035	3.7884
5	5.6268	-0.1269	-2.6040	0.1584	0.2542	0.1526	2.8155	4.5177	2.7124
6	5.6332	0.0236	-2.5897	0.1342	0.1240	0.1187	2.3828	2.2005	2.1079
7	5.5585	-0.0164	-2.6579	0.1959	0.1546	0.2674	3.5237	2.7810	4.8109
8	5.3418	-0.1591	-2.9921	0.1204	0.1729	0.1153	2.2543	3.2364	2.1581
9	5.2861	-0.0719	-3.1260	0.1287	0.1641	0.1305	2.4354	3.1051	2.4696
10	5.7320	-0.0270	-2.5749	0.2298	0.2765	0.2556	4.0088	4.8243	4.4585

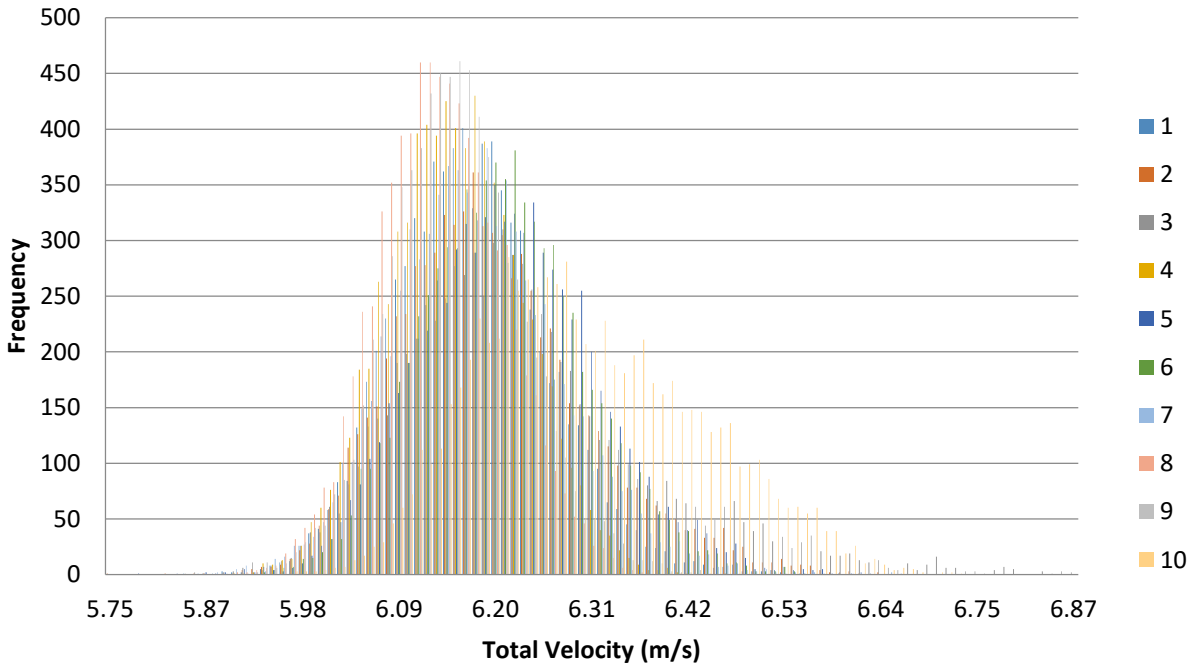


Figure 1. Velocity histogram for each interval (100 bins).

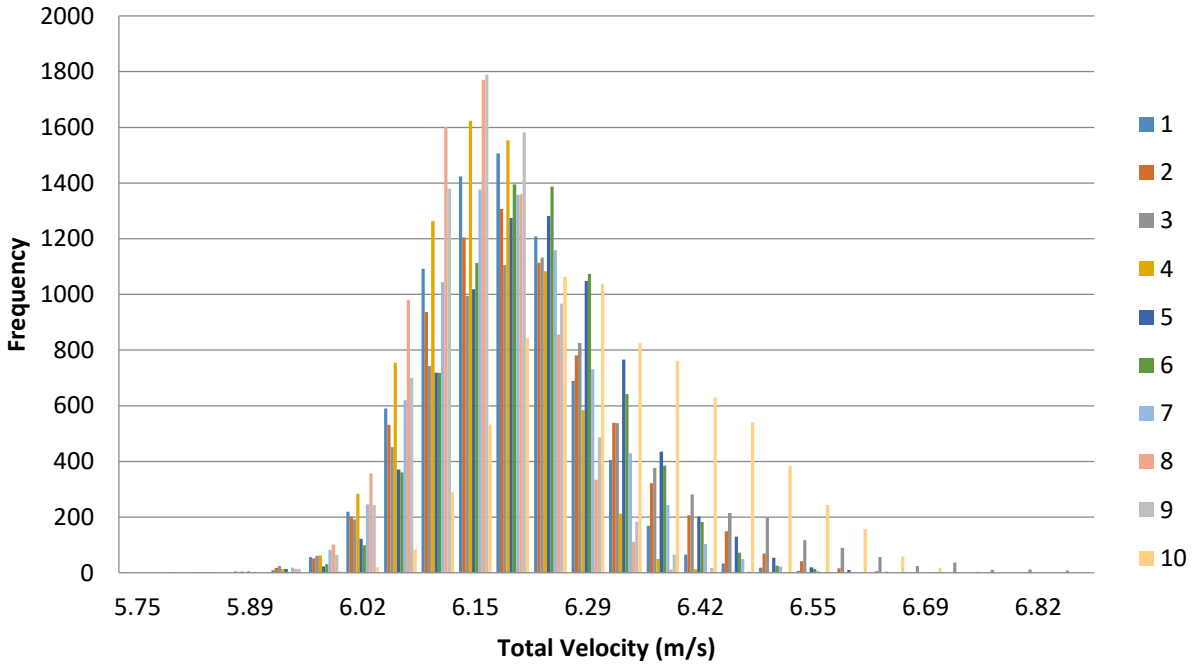
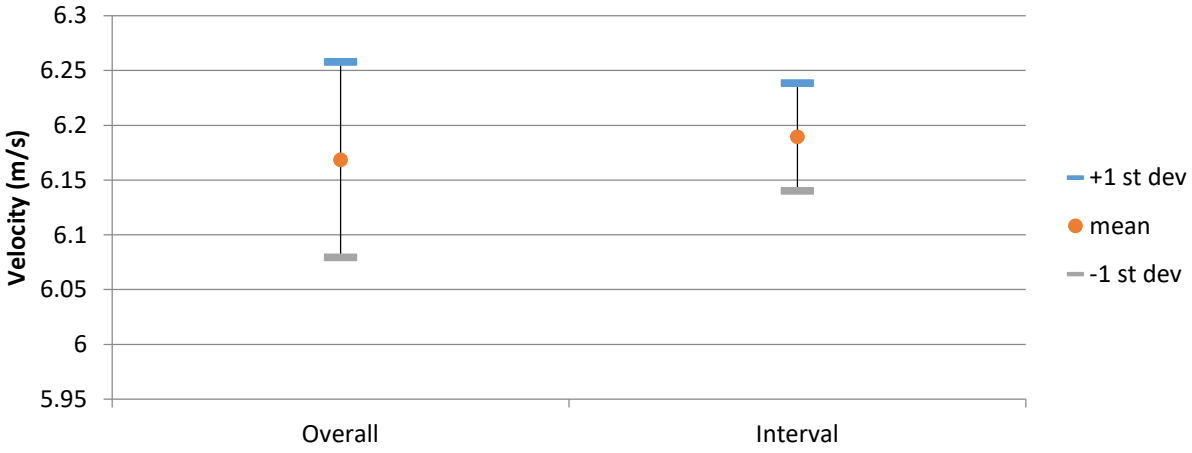
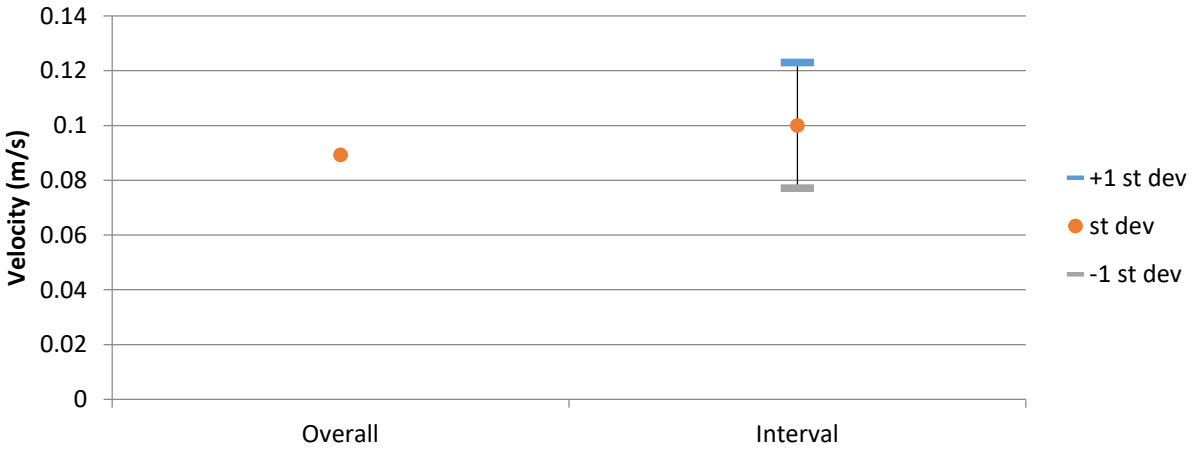


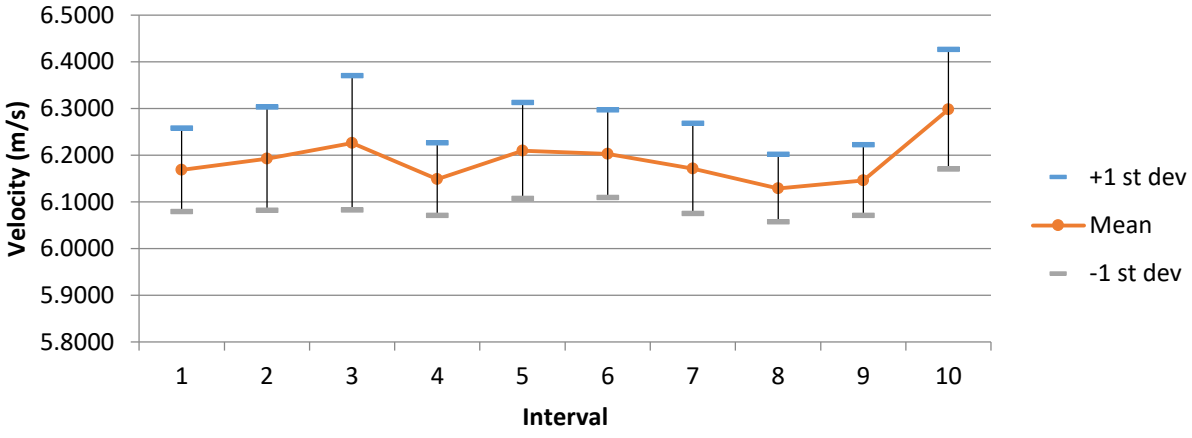
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 83
Blockage Condition: All Buildings
Blower Frequency: 25 Hz
Inlet Probe Location: E4
First Sample Date: 14-Aug-13
First Sample Time: 07:42:56.671

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	6.5885	4.6964	5.5799	0.1815
u	6.4300	4.5700	5.4261	0.1956
v	2.4400	-1.7200	0.4970	0.6872
w	2.0900	-2.7900	-0.6327	0.7535

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	6.3239	5.2448	5.6911	0.1513	2.8505
2	6.2387	5.0462	5.6309	0.1605	3.0899
3	6.5885	4.6964	5.5953	0.1729	2.7608
4	6.1365	4.9667	5.5226	0.1525	2.9254
5	6.1116	4.8713	5.4927	0.1607	2.6897
6	6.0198	4.7144	5.4689	0.1471	3.5479
7	6.2804	4.8258	5.5646	0.1974	3.1228
8	6.4822	5.1382	5.7519	0.1796	2.6322
9	6.1562	5.0240	5.5532	0.1462	2.2857
10	5.9235	5.1050	5.5282	0.1264	2.8577
		Average	5.5799	0.1595	2.8762
		St Dev	0.0892	0.0199	0.3190

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.5539	0.5235	-0.9096	0.1546	0.5097	0.4243	2.7845	9.1766	7.6403
2	5.4824	0.1787	-1.1627	0.1746	0.3804	0.3424	3.1856	6.9392	6.2451
3	5.4296	-0.3210	-1.1943	0.1761	0.4078	0.3600	3.2434	7.5101	6.6309
4	5.3745	0.0989	-1.0799	0.1791	0.5198	0.3983	3.3329	9.6720	7.4101
5	5.2886	-0.4283	-1.2507	0.1768	0.5700	0.3497	3.3433	10.7778	6.6120
6	5.3831	0.8266	-0.0733	0.1557	0.4056	0.2740	2.8928	7.5349	5.0900
7	5.3516	1.0865	0.8817	0.2371	0.2994	0.5103	4.4295	5.5953	9.5363
8	5.5497	1.0459	-0.8024	0.2101	0.3781	0.6269	3.7863	6.8135	11.2960
9	5.4073	1.0865	-0.4055	0.1547	0.2916	0.4081	2.8607	5.3925	7.5468
10	5.4408	0.8728	-0.3307	0.1449	0.2048	0.2037	2.6633	3.7640	3.7444

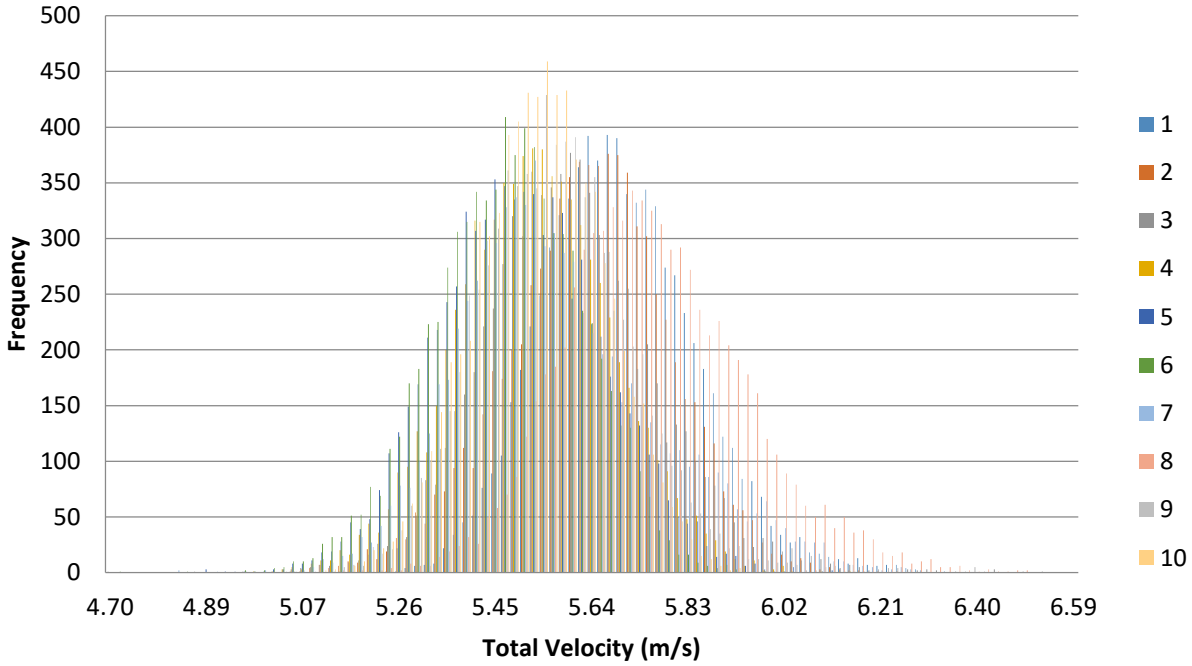


Figure 1. Velocity histogram for each interval (100 bins).

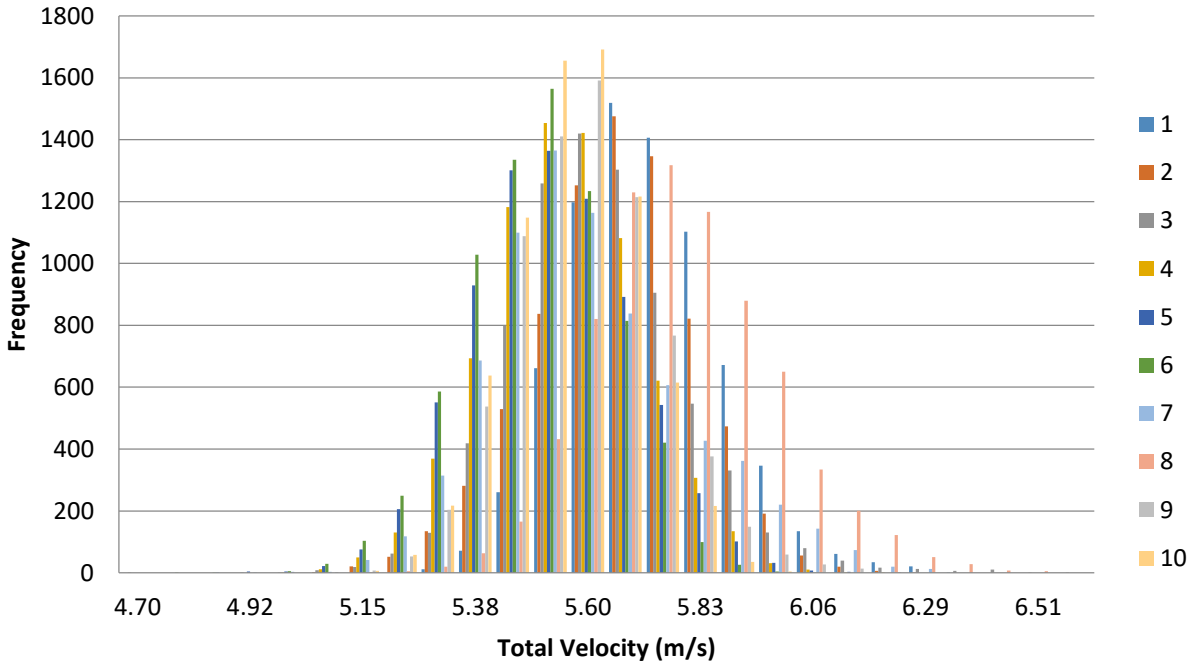
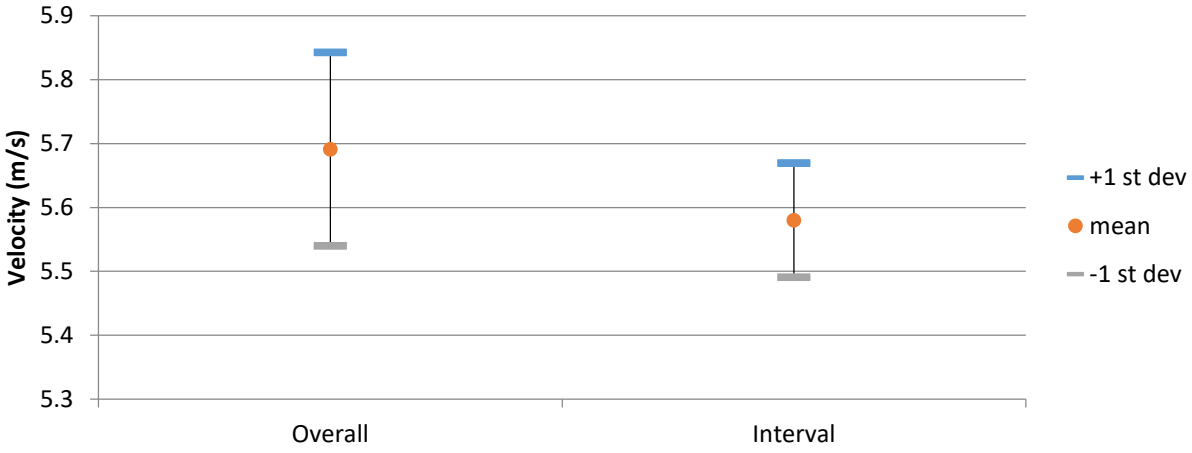
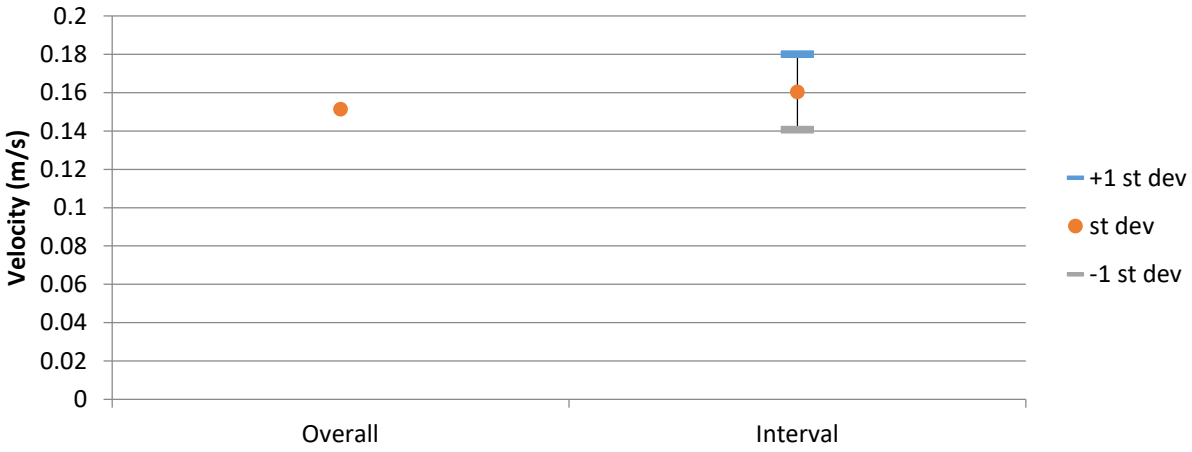


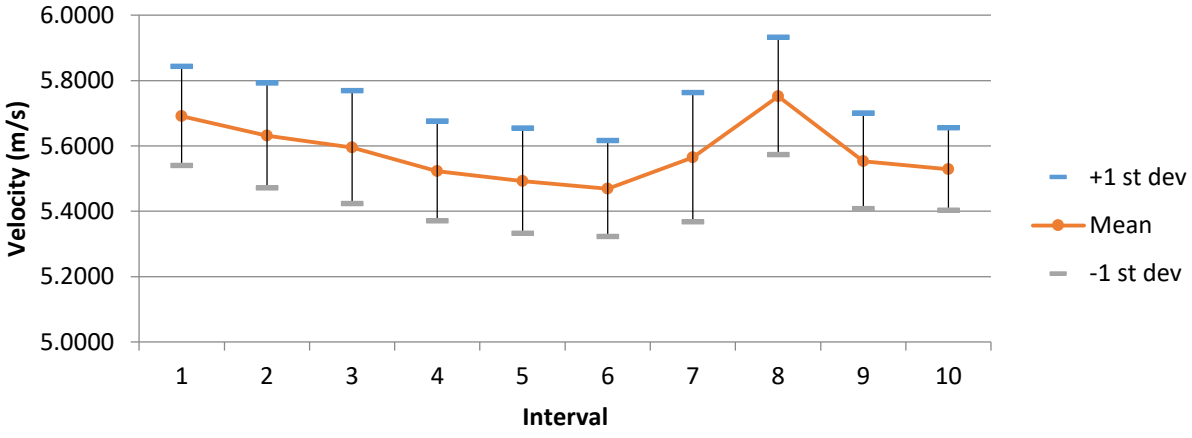
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 84
Blockage Condition: All Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E5
First Sample Date: 14-Aug-13
First Sample Time: 07:44:45.890

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	6.5358	4.4634	5.4304	0.1397
u	6.2400	4.4400	5.3262	0.1283
v	2.6600	-1.8200	0.4020	0.5838
w	0.8230	-2.6100	-0.6733	0.4098

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	6.0727	4.8303	5.4251	0.1138	1.6791
2	5.8817	4.8881	5.4004	0.0907	1.6228
3	5.6810	4.9854	5.3396	0.0867	2.3174
4	5.9088	4.9444	5.4625	0.1266	1.3501
5	5.7386	5.2262	5.4661	0.0738	2.1300
6	6.5358	5.0451	5.4924	0.1170	1.9747
7	6.0901	4.8976	5.4371	0.1074	2.4512
8	6.1897	4.6813	5.3317	0.1307	2.5455
9	6.4790	4.4634	5.3488	0.1362	2.7436
10	6.1884	5.1576	5.6003	0.1536	2.0926
		Average	5.4304	0.1136	2.0907
		St Dev	0.0821	0.0246	0.4203

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.2764	0.5152	-1.0305	0.1044	0.3700	0.3597	1.9778	7.0129	6.8172
2	5.3215	0.3228	-0.7585	0.0944	0.2748	0.3003	1.7736	5.1638	5.6422
3	5.2639	-0.1640	-0.8039	0.0911	0.2527	0.2559	1.7300	4.8002	4.8611
4	5.3580	-0.4128	-0.6404	0.1187	0.4870	0.5619	2.2150	9.0894	10.4877
5	5.3990	0.4639	-0.5880	0.0909	0.2453	0.3237	1.6837	4.5428	5.9950
6	5.3539	1.0244	-0.5155	0.1151	0.2505	0.3534	2.1499	4.6785	6.6007
7	5.3548	0.5728	-0.6078	0.1094	0.3355	0.2790	2.0423	6.2653	5.2096
8	5.2527	0.2061	-0.6281	0.1360	0.5112	0.3694	2.5885	9.7321	7.0334
9	5.2496	0.3003	-0.7892	0.1372	0.4460	0.3739	2.6133	8.4958	7.1223
10	5.4326	1.1910	-0.3715	0.1219	0.3222	0.4462	2.2430	5.9317	8.2131

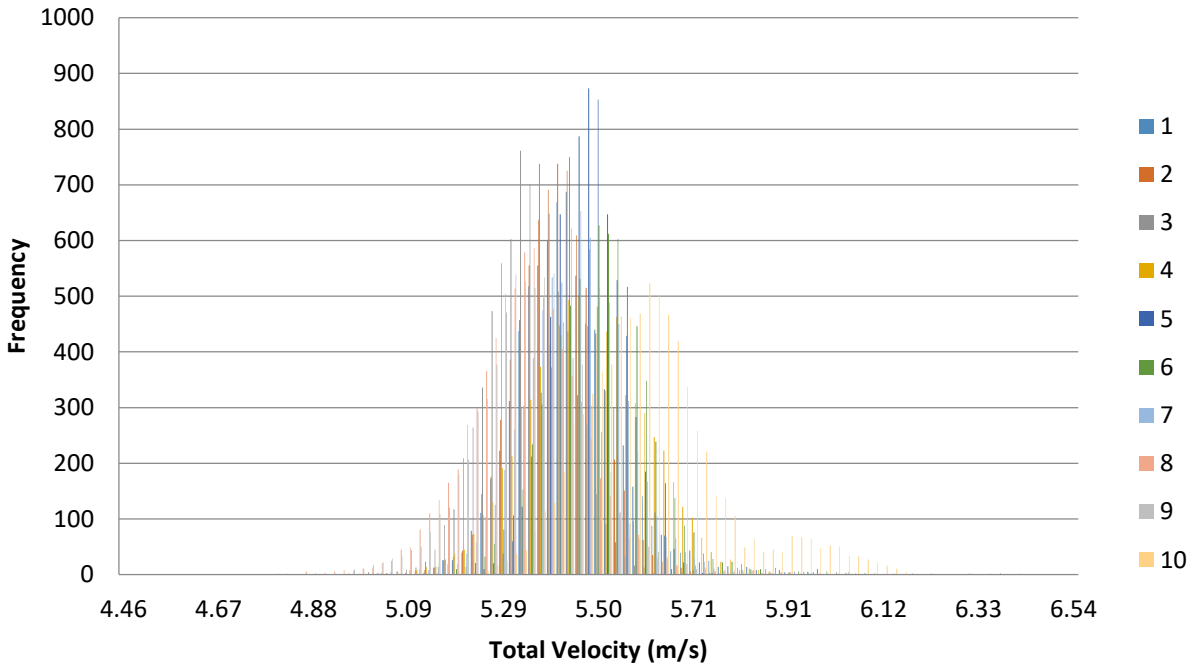


Figure 1. Velocity histogram for each interval (100 bins).

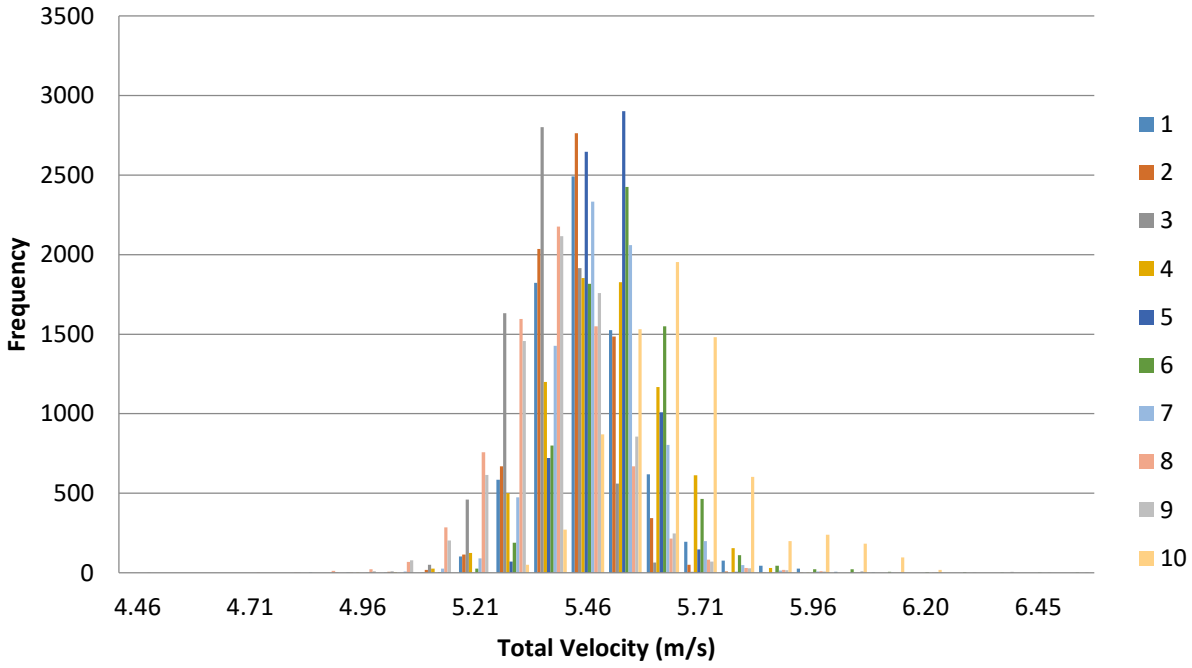
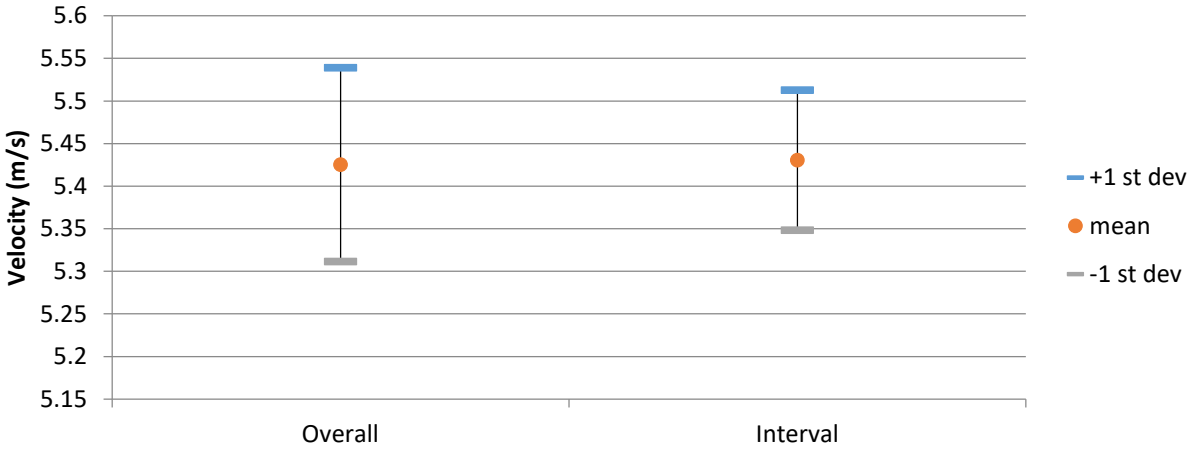
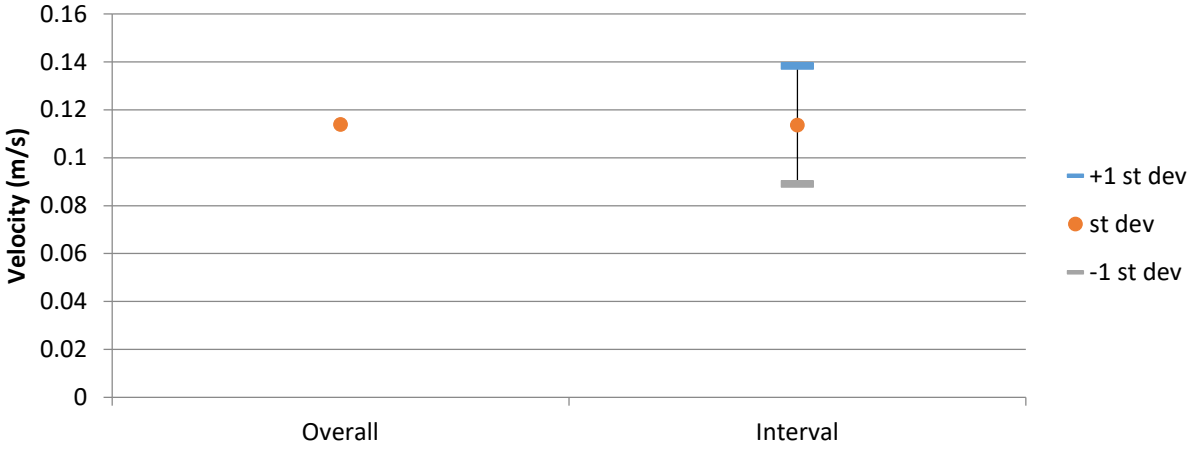


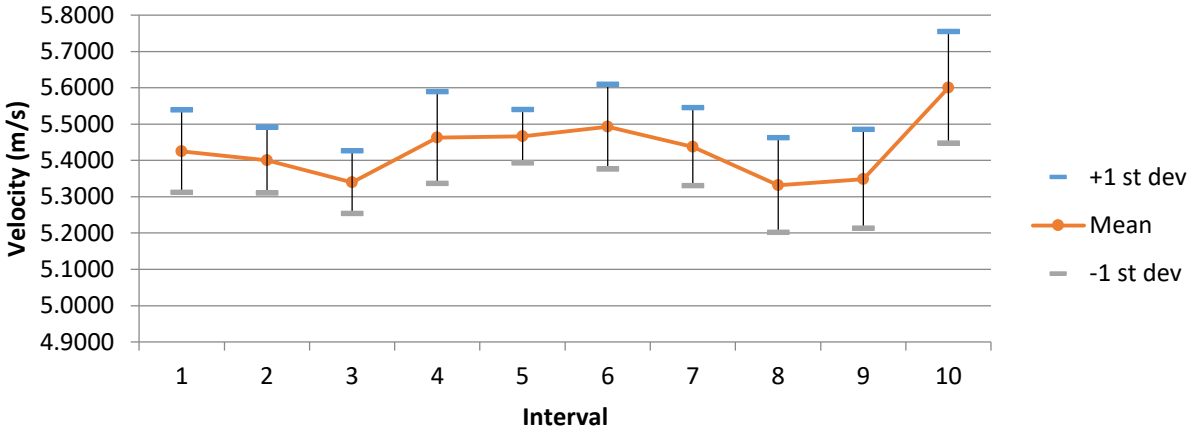
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 85
Blockage Condition: All Buildings
Blower Frequency: 25 Hz
Inlet Probe Location: D5
First Sample Date: 14-Aug-13
First Sample Time: 07:46:58.593

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	6.1563	4.5015	5.1615	0.1035
u	6.1500	4.4000	5.0601	0.1319
v	1.4200	-1.8600	-0.7685	0.4144
w	1.4600	-1.4600	-0.2877	0.4301

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.5172	4.7991	5.1131	0.0855	3.2653
2	6.1563	4.5015	5.2101	0.1701	1.8610
3	5.5472	4.5497	5.1311	0.0955	1.6453
4	5.5195	4.8265	5.1530	0.0848	1.6820
5	5.5866	4.8601	5.1986	0.0874	1.8948
6	5.6507	4.8668	5.1880	0.0983	1.4394
7	5.4201	4.8802	5.1415	0.0740	1.5528
8	5.4531	4.8691	5.1549	0.0800	1.7371
9	5.4853	4.7219	5.1622	0.0897	1.8454
10	5.5762	4.6380	5.1629	0.0953	1.8611
		Average	5.1615	0.0961	1.8784
		St Dev	0.0302	0.0271	0.4834

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	4.8731	-1.5060	-0.1963	0.0937	0.1728	0.2417	1.9219	3.5454	4.9608
2	5.1272	-0.4319	0.4027	0.1938	0.5823	0.4019	3.7802	11.3570	7.8384
3	5.1080	-0.3581	0.1186	0.0977	0.2426	0.1856	1.9120	4.7495	3.6335
4	5.1073	-0.5947	-0.1487	0.0846	0.1451	0.2679	1.6571	2.8406	5.2445
5	5.1380	-0.6466	-0.3316	0.0917	0.2386	0.2027	1.7839	4.6442	3.9444
6	5.0594	-0.9297	-0.5283	0.0960	0.2285	0.3501	1.8968	4.5166	6.9188
7	5.0093	-0.9207	-0.6821	0.0766	0.1175	0.1215	1.5296	2.3459	2.4256
8	5.0230	-0.9308	-0.6383	0.0959	0.1864	0.1741	1.9095	3.7117	3.4668
9	5.0596	-0.7124	-0.5430	0.1071	0.2971	0.3941	2.1168	5.8719	7.7899
10	5.0962	-0.6545	-0.3296	0.1068	0.2452	0.2911	2.0964	4.8114	5.7124

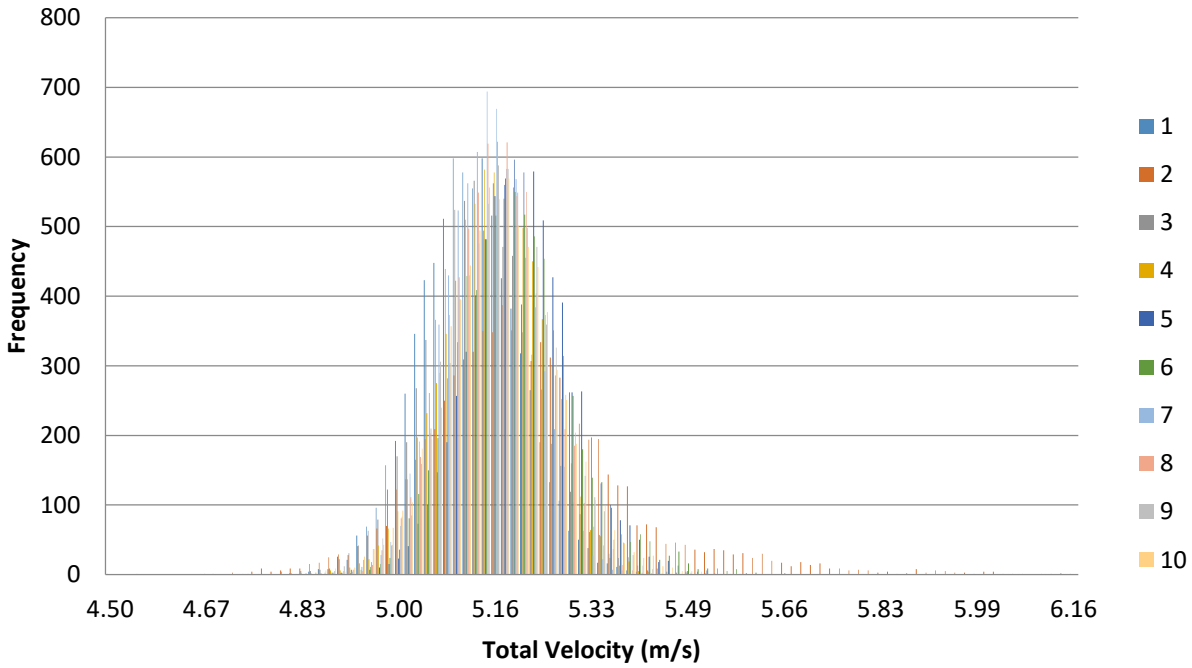


Figure 1. Velocity histogram for each interval (100 bins).

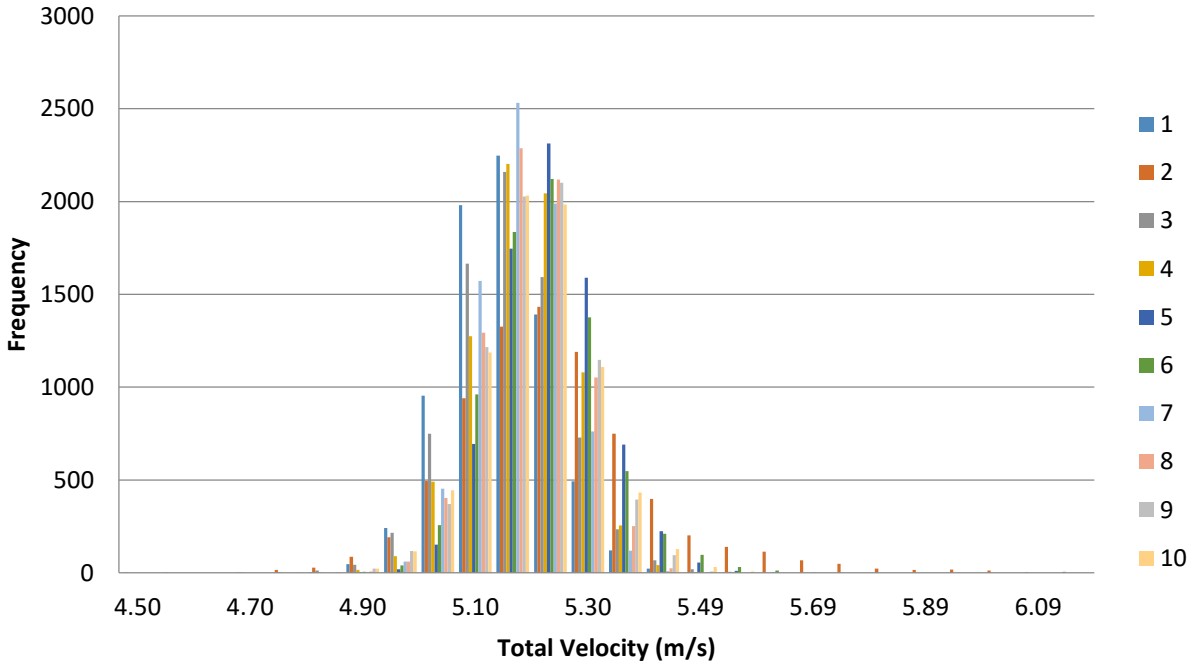
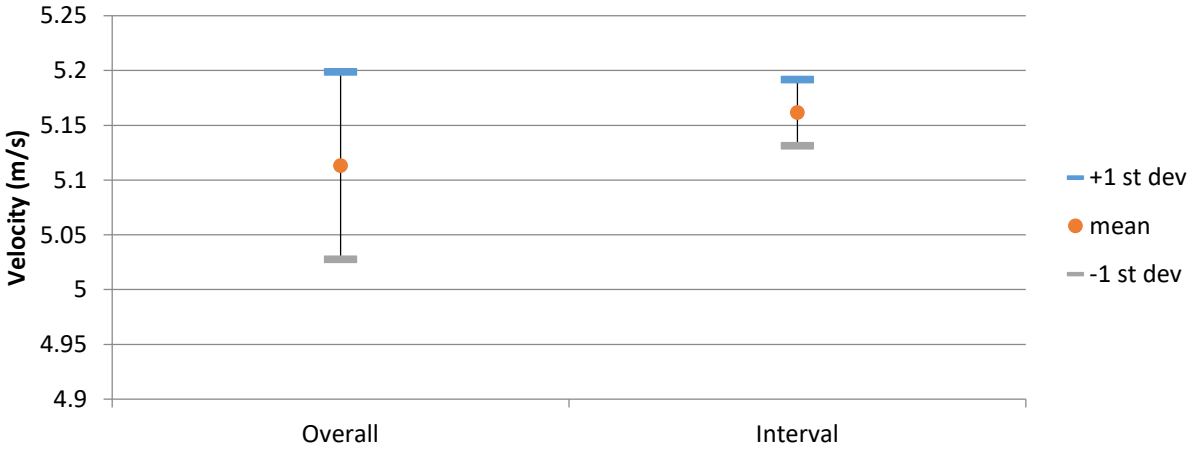
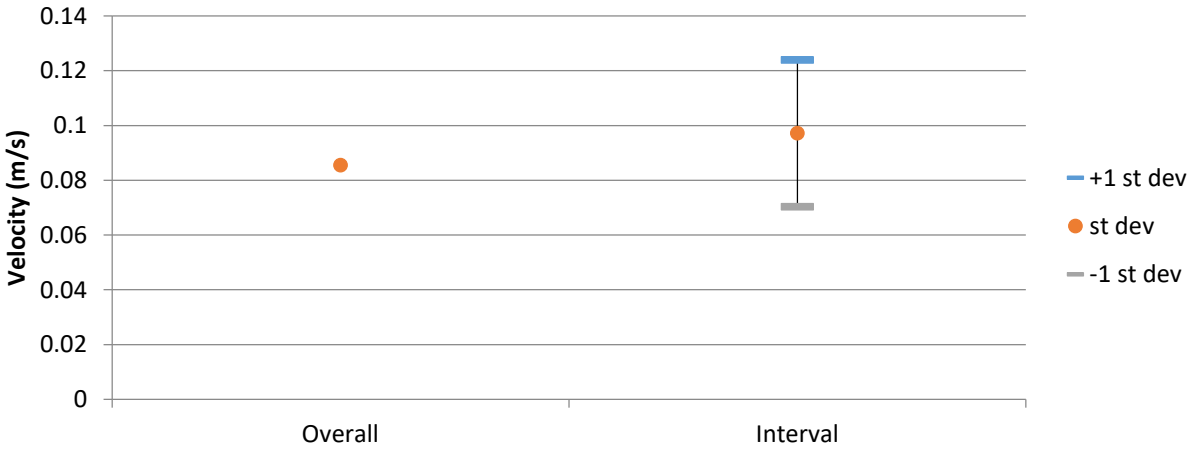


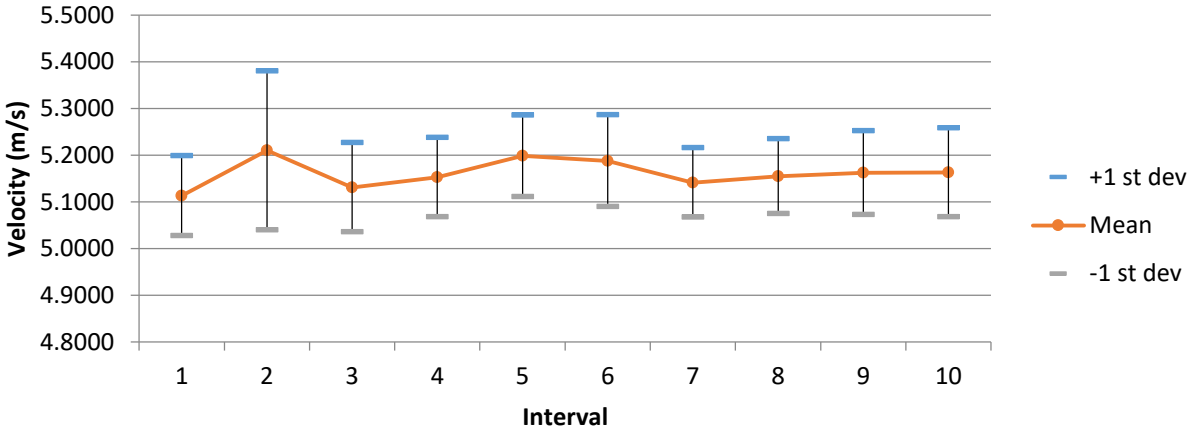
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 86
Blockage Condition: All Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: D4
First Sample Date: 14-Aug-13
First Sample Time: 07:48:27.281

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	6.0938	4.6065	5.2435	0.1543
u	5.9700	4.4800	5.1212	0.1586
v	0.6370	-2.4900	-0.7227	0.4413
w	0.7920	-2.2200	-0.5826	0.4584

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.6803	4.6872	5.2147	0.1403	2.8412
2	5.7063	4.6065	5.1917	0.1475	3.6827
3	6.0938	4.7643	5.3444	0.1968	2.9444
4	5.9125	4.7533	5.2572	0.1548	2.6019
5	5.8040	4.7101	5.2451	0.1365	2.5051
6	5.7107	4.7615	5.2316	0.1311	2.4717
7	5.7511	4.7380	5.2387	0.1295	2.9089
8	6.0185	4.7203	5.2572	0.1529	2.6552
9	5.7115	4.7438	5.2594	0.1396	2.8381
10	5.8712	4.6117	5.1950	0.1474	2.8158
		Average	5.2435	0.1476	2.8265
		St Dev	0.0433	0.0193	0.3261

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.1096	-0.8433	-0.4635	0.1468	0.1998	0.3426	2.8739	3.9096	6.7056
2	5.1337	-0.7281	-0.0261	0.1425	0.1842	0.1871	2.7755	3.5880	3.6450
3	5.0252	-1.5677	-0.6339	0.1932	0.3607	0.5670	3.8445	7.1775	11.2840
4	5.1040	-0.7529	-0.8183	0.1617	0.4896	0.3302	3.1689	9.5923	6.4690
5	5.1459	-0.4485	-0.7876	0.1458	0.3169	0.3248	2.8339	6.1579	6.3115
6	5.1102	-0.6304	-0.8178	0.1373	0.3427	0.2650	2.6861	6.7059	5.1858
7	5.0704	-0.7209	-1.0035	0.1378	0.3126	0.3290	2.7179	6.1650	6.4888
8	5.1620	-0.4868	-0.7499	0.1508	0.2927	0.3280	2.9211	5.6706	6.3536
9	5.2079	-0.3915	-0.5147	0.1414	0.2321	0.2576	2.7157	4.4575	4.9456
10	5.1427	-0.6565	-0.0106	0.1473	0.2561	0.2102	2.8642	4.9799	4.0869

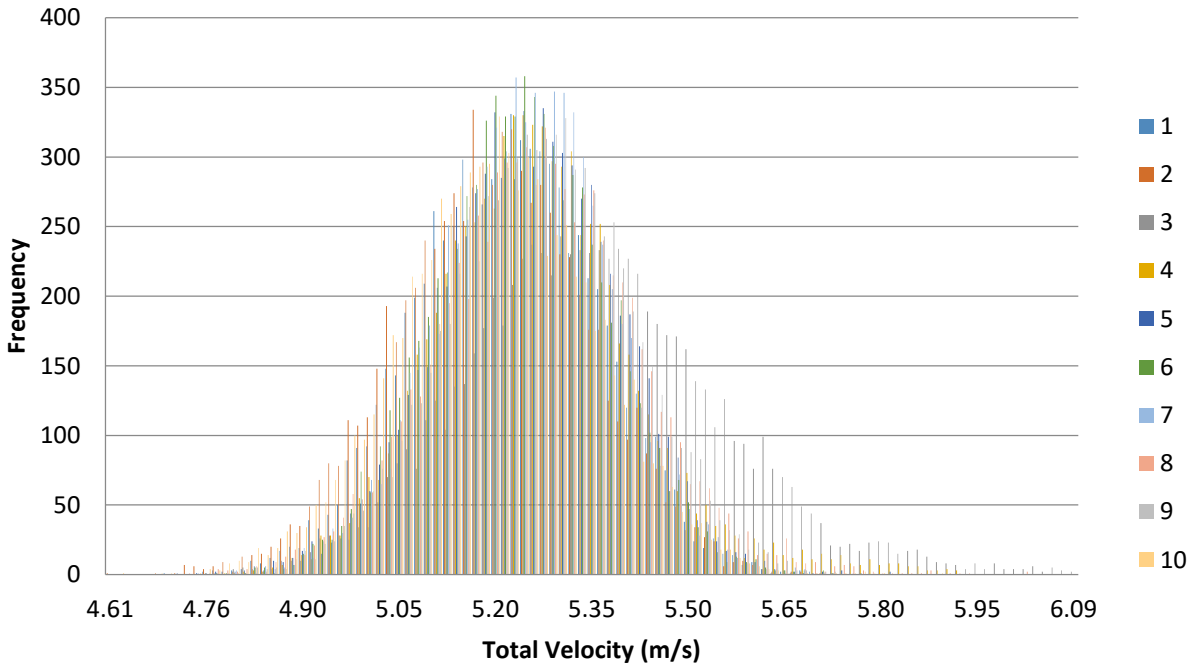


Figure 1. Velocity histogram for each interval (100 bins).

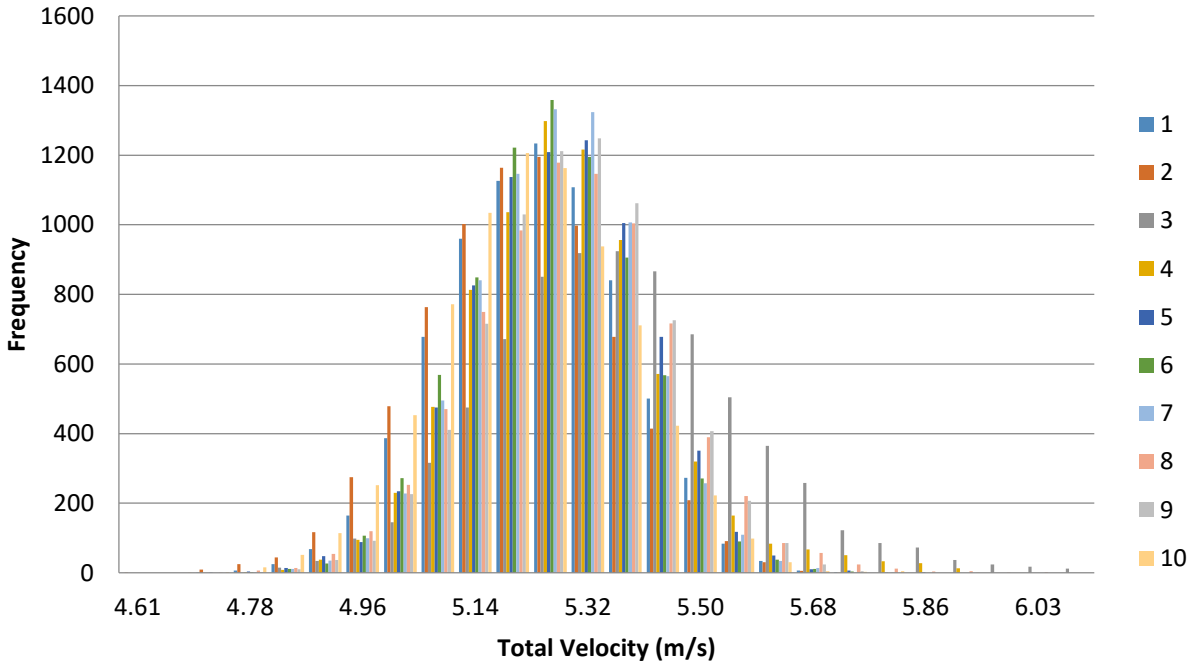
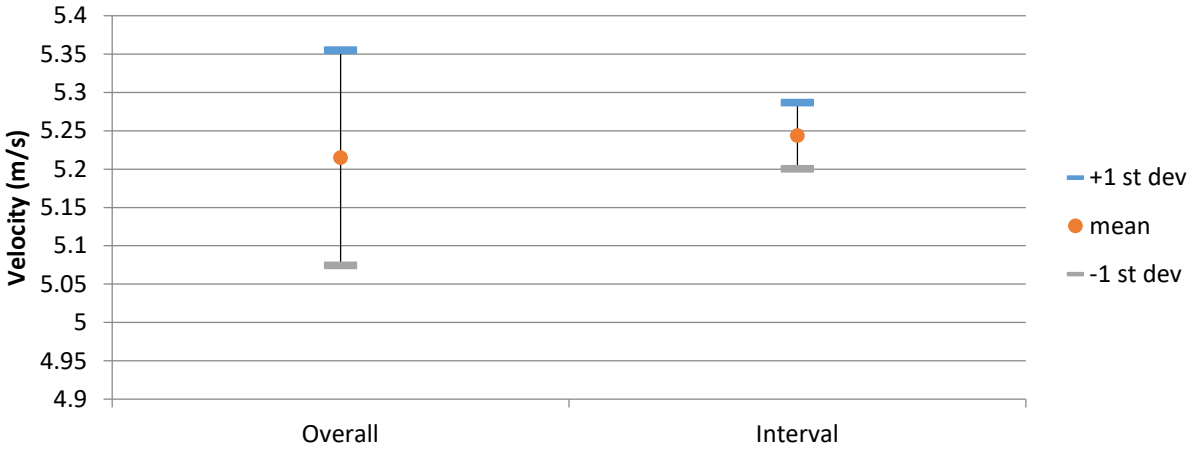
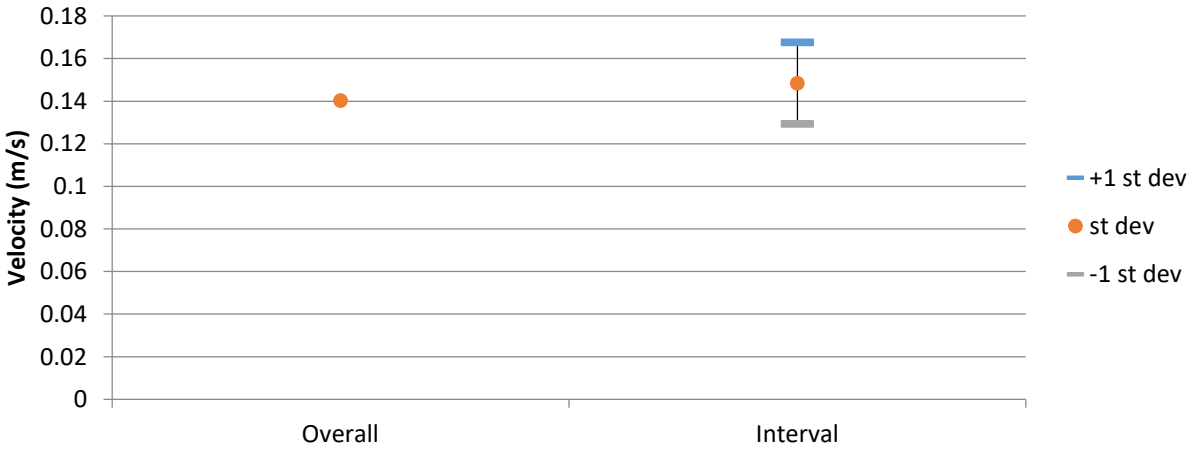


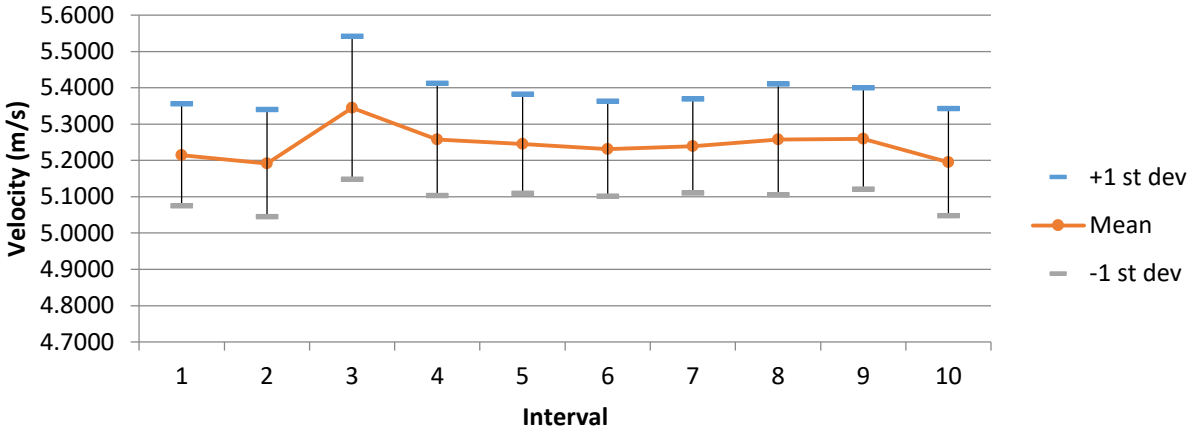
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 87
Blockage Condition: All Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: D3
First Sample Date: 14-Aug-13
First Sample Time: 07:49:45.593

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	6.7659	5.1504	5.8815	0.2285
u	6.2400	4.6000	5.3879	0.2119
v	-0.7340	-3.2900	-2.0293	0.4359
w	0.6770	-2.2500	-0.9878	0.5347

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	6.1496	5.1504	5.6896	0.1298	2.0135
2	6.3746	5.2683	5.8607	0.1180	3.9433
3	6.7543	5.3560	6.0161	0.2372	2.8075
4	6.7659	5.6704	6.1923	0.1738	2.3647
5	6.6640	5.7139	6.1657	0.1458	1.9072
6	6.2129	5.4712	5.8267	0.1111	2.2917
7	6.2692	5.3168	5.7584	0.1320	2.4958
8	6.2571	5.3633	5.7217	0.1428	1.7793
9	6.3340	5.4346	5.7937	0.1031	2.9975
10	6.5474	5.2132	5.7904	0.1736	2.4947
		Average	5.8815	0.1467	2.5095
		St Dev	0.1803	0.0397	0.5995

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.2848	-1.8739	-0.7096	0.1195	0.3525	0.5530	2.2611	6.6697	10.4641
2	5.6019	-1.5434	-0.5805	0.1268	0.3219	0.3772	2.2638	5.7464	6.7339
3	5.5385	-1.9660	-1.1264	0.1382	0.4125	0.5014	2.4957	7.4483	9.0535
4	5.5204	-2.4486	-1.3044	0.1815	0.2551	0.3249	3.2876	4.6217	5.8861
5	5.5536	-2.1683	-1.4700	0.1414	0.4676	0.3061	2.5459	8.4194	5.5121
6	5.4555	-1.8905	-0.7165	0.0967	0.2330	0.2226	1.7719	4.2704	4.0803
7	5.3710	-1.9190	-0.6670	0.0932	0.3448	0.2717	1.7349	6.4199	5.0583
8	5.3168	-1.9515	-0.4211	0.1675	0.5011	0.4752	3.1513	9.4241	8.9384
9	5.1145	-2.2706	-1.4822	0.0908	0.1832	0.1564	1.7753	3.5820	3.0578
10	5.1227	-2.2611	-1.4000	0.1147	0.3893	0.2824	2.2399	7.6004	5.5124

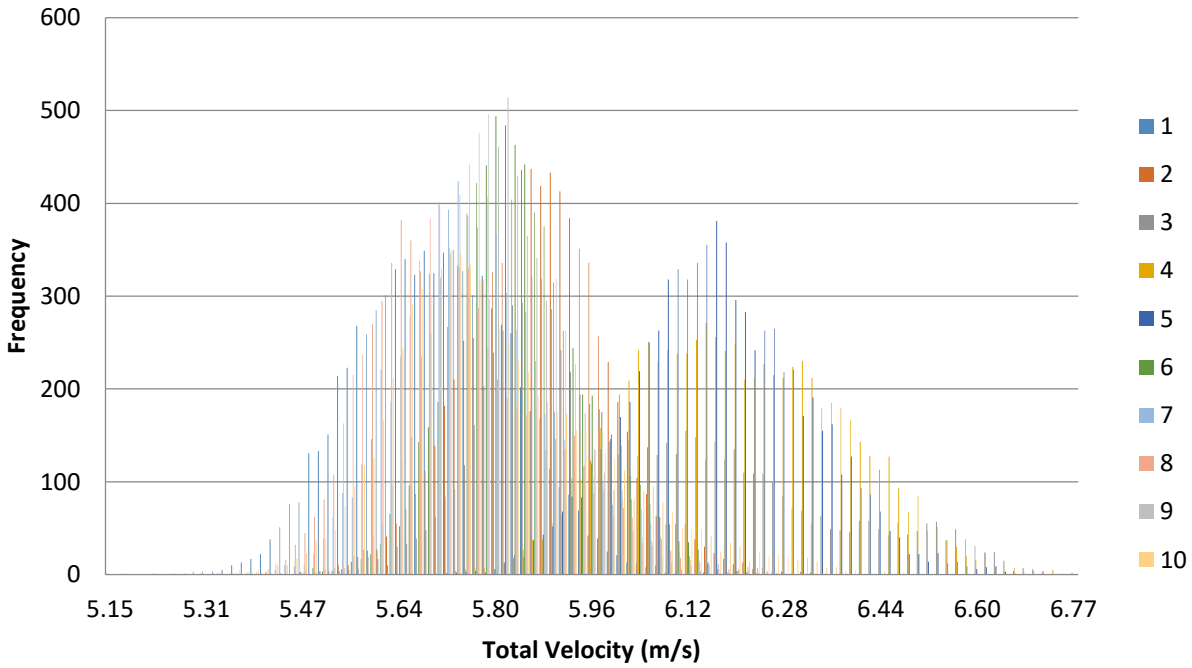


Figure 1. Velocity histogram for each interval (100 bins).

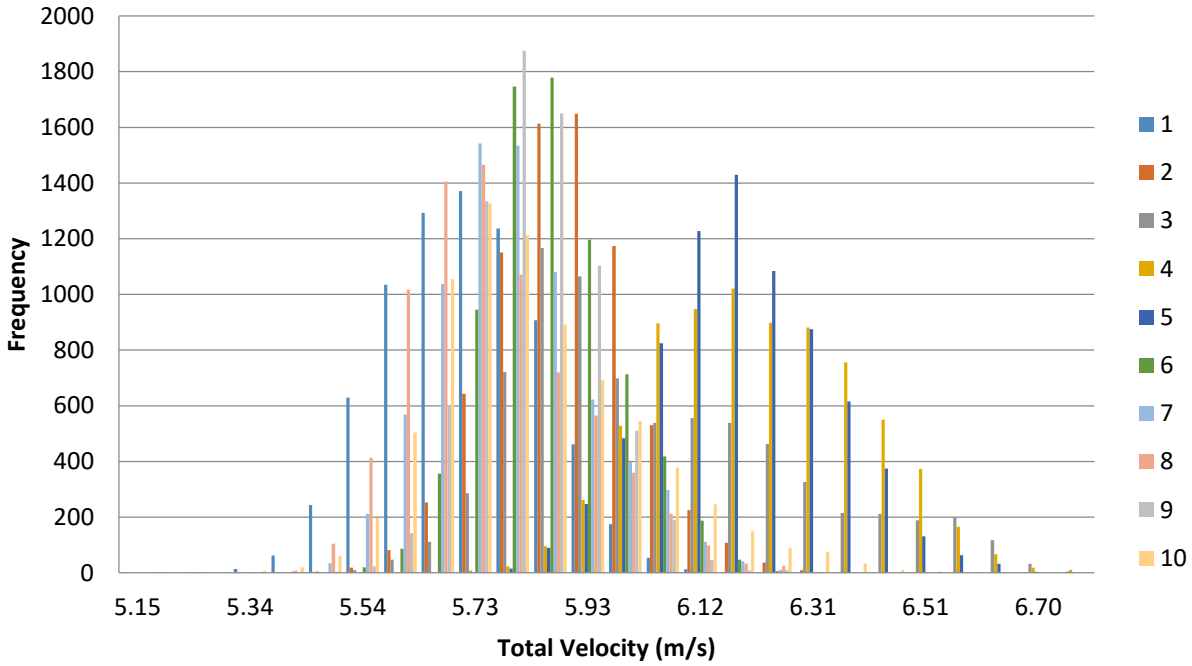
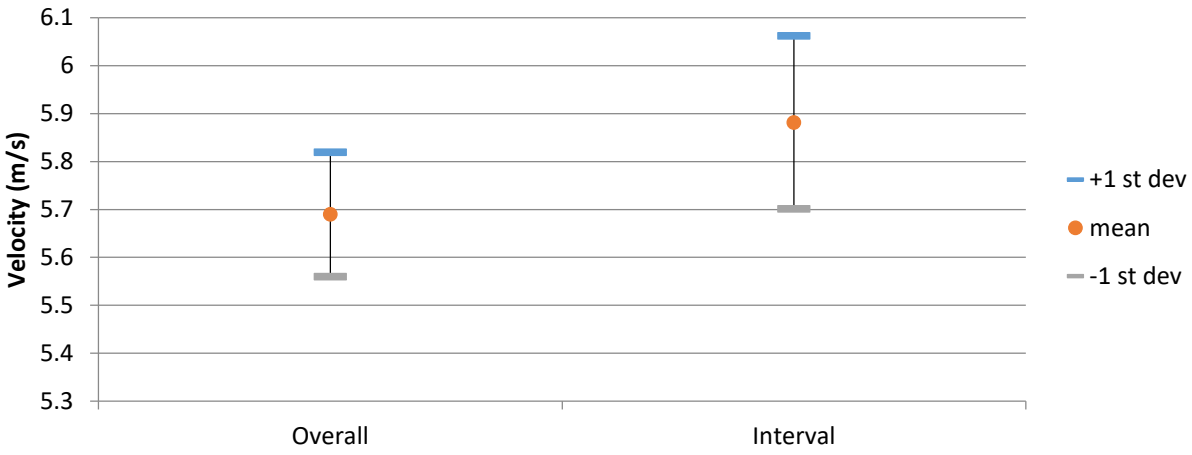
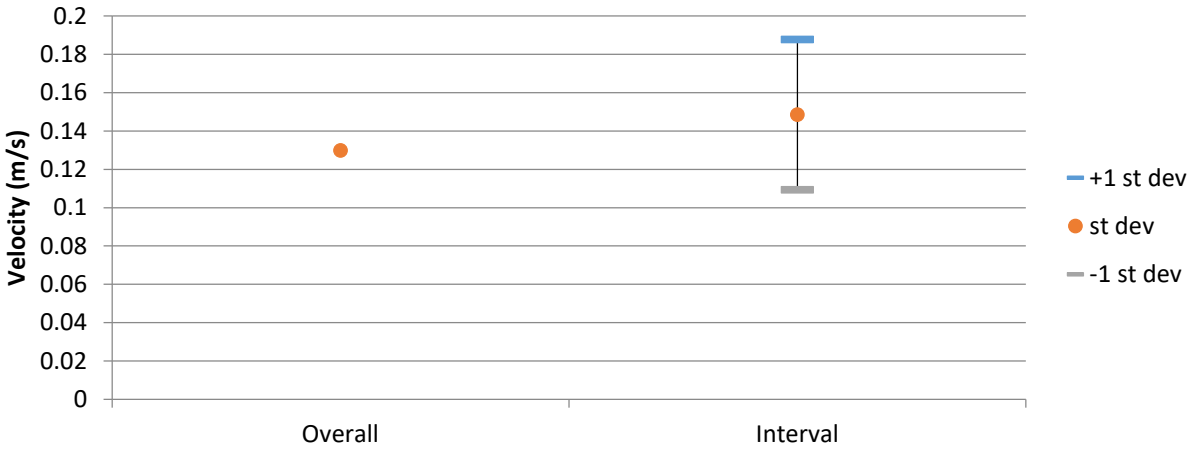


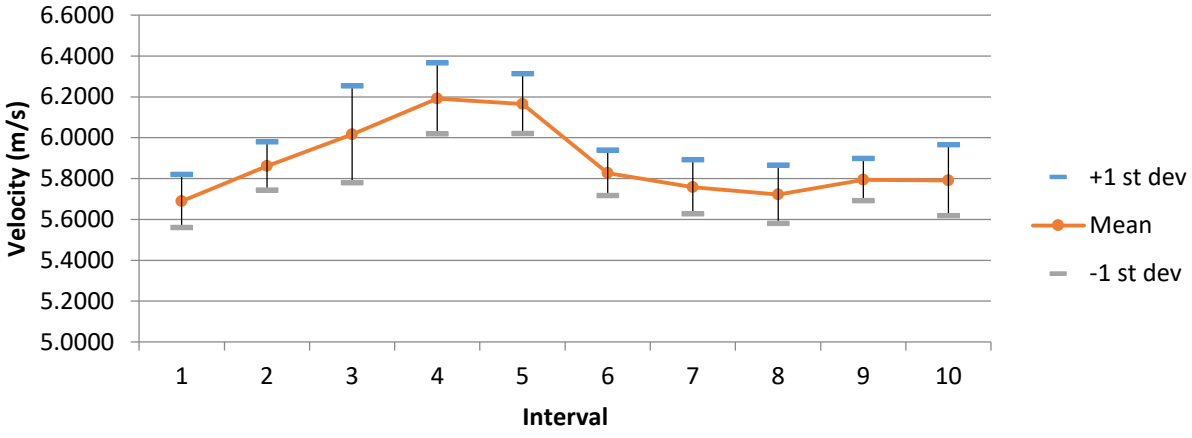
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 88
Blockage Condition: all Buildings
Blower Frequency: 25 Hz
Inlet Probe Location: D2
First Sample Date: 14-Aug-13
First Sample Time: 07:51:09.937

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	8.4489	5.2432	6.0449	0.2291
u	6.7100	3.6900	5.2323	0.4203
v	2.3900	-3.2400	-1.1256	0.5145
w	-0.7170	-6.1100	-2.6513	0.6922

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	8.4489	5.2432	6.1986	0.2761	4.4549	108	0.86 %
2	7.1664	5.4609	6.1489	0.2907	4.7270	0	0.00 %
3	6.3342	5.4204	5.8750	0.0977	1.6630	0	0.00 %
4	7.1094	5.4946	6.2308	0.3079	4.9411	0	0.00 %
5	6.7659	5.4380	6.1090	0.1797	2.9414	0	0.00 %
6	6.4560	5.4004	5.8612	0.0944	1.6105	0	0.00 %
7	6.4269	5.6147	5.9367	0.1105	1.8614	0	0.00 %
8	6.3870	5.6581	5.9651	0.1028	1.7240	0	0.00 %
9	6.4538	5.6785	5.9903	0.1062	1.7733	0	0.00 %
10	6.6653	5.7247	6.1362	0.1426	2.3236	0	0.00 %
		Average	6.0452	0.1709	2.8020		
		St dev	0.1285	0.0829	1.3070		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	4.6686	-0.6523	-3.9796	0.2485	0.4875	0.3755	5.3230	10.4432	8.0433
2	5.2402	-0.4065	-2.9910	0.6284	0.4944	0.8267	11.9927	9.4339	15.7768
3	4.8885	-1.0032	-3.0664	0.2322	0.1890	0.3582	4.7508	3.8655	7.3264
4	5.4075	-1.6416	-2.4384	0.4524	0.6341	0.6544	8.3669	11.7270	12.1012
5	5.4123	-1.6150	-2.2414	0.3706	0.2433	0.4801	6.8482	4.4961	8.8697
6	5.0068	-1.2201	-2.7656	0.1631	0.2879	0.2207	3.2569	5.7496	4.4085
7	5.3105	-1.2975	-2.2982	0.1477	0.2035	0.1621	2.7822	3.8326	3.0520
8	5.3400	-1.1470	-2.3733	0.1603	0.3065	0.0997	3.0020	5.7404	1.8669
9	5.3803	-1.0883	-2.3736	0.1641	0.2717	0.1673	3.0500	5.0497	3.1090
10	5.6604	-1.1773	-2.0044	0.2061	0.2731	0.3350	3.6416	4.8244	5.9185

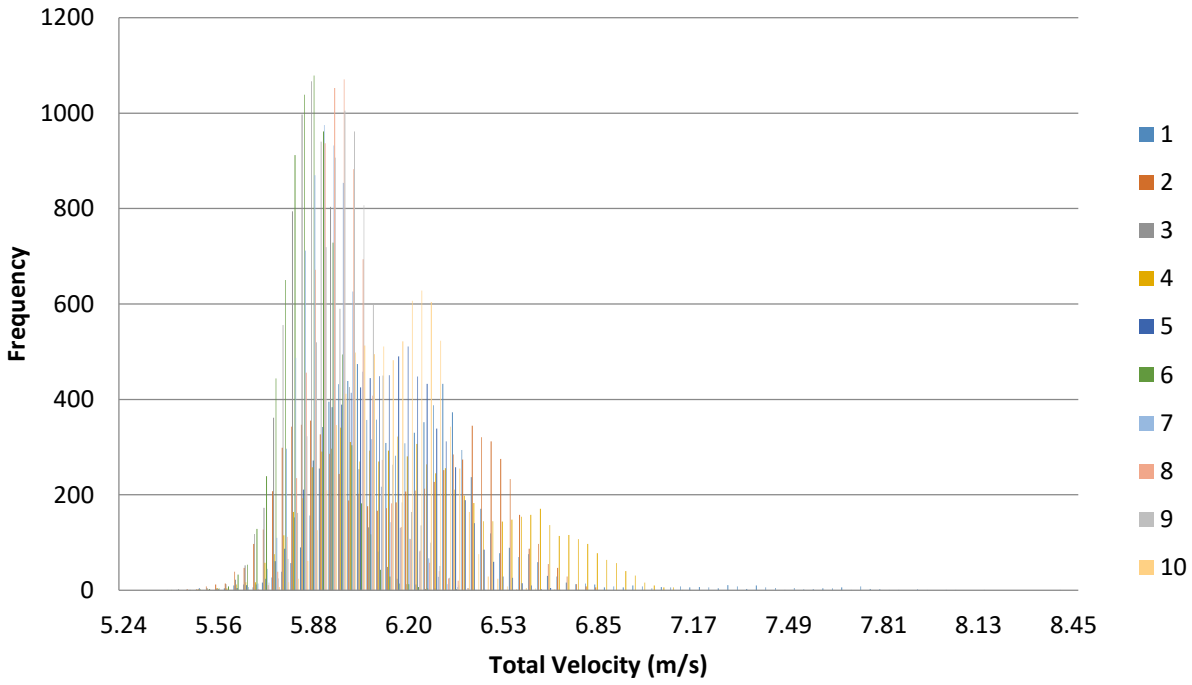


Figure 1. Velocity histogram for each interval (100 bins).

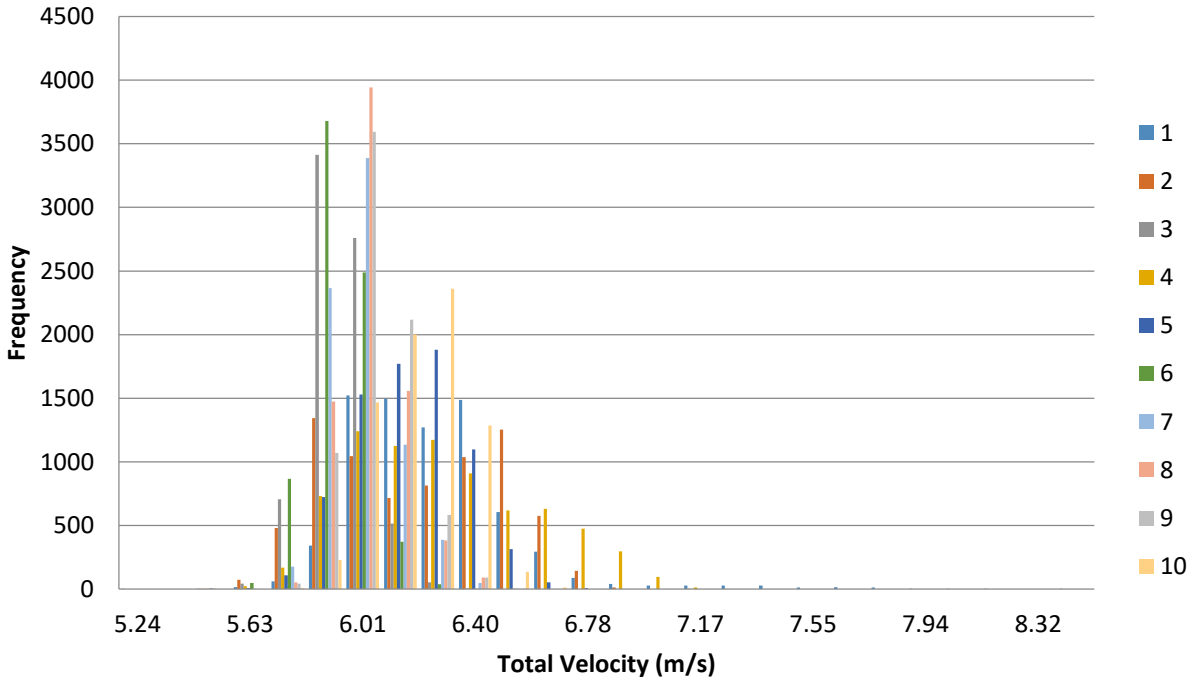
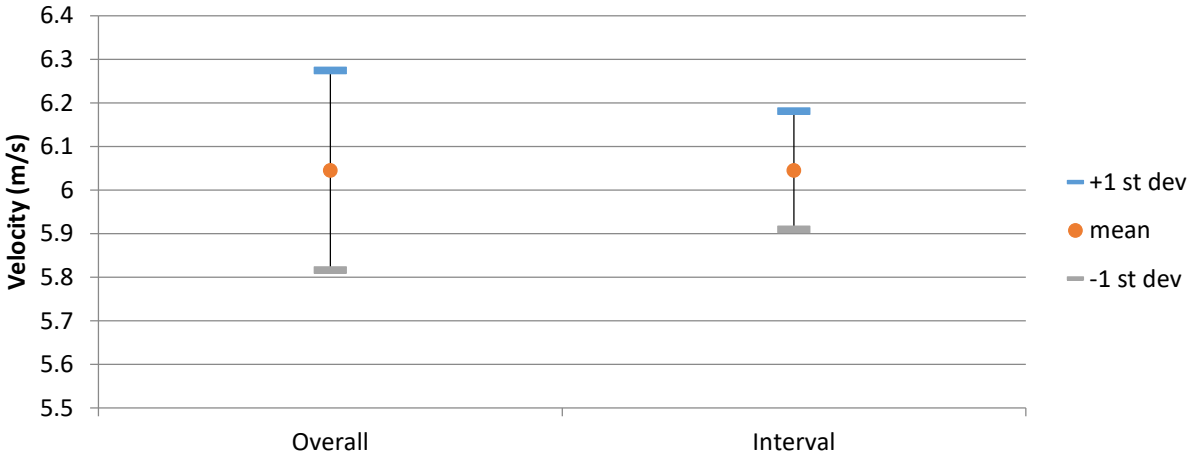
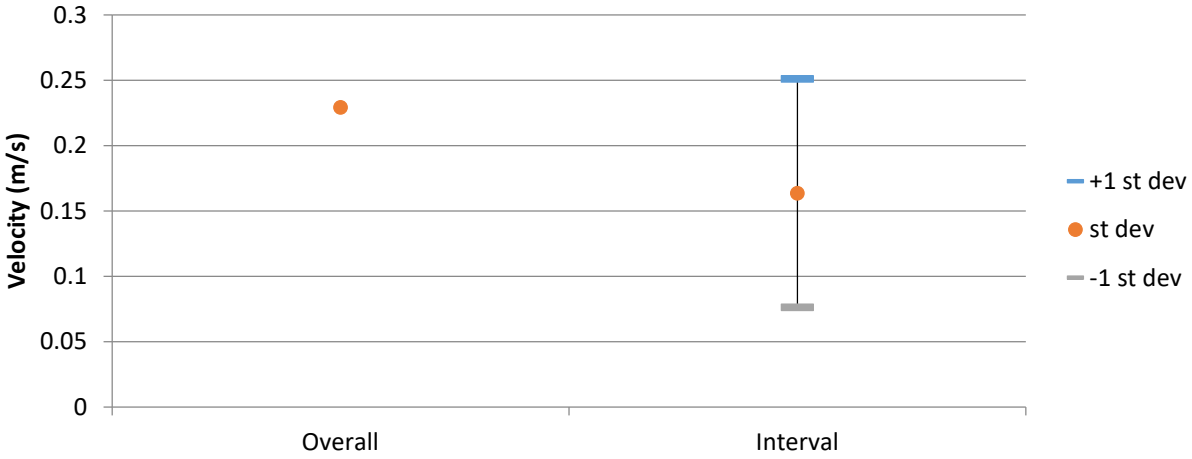


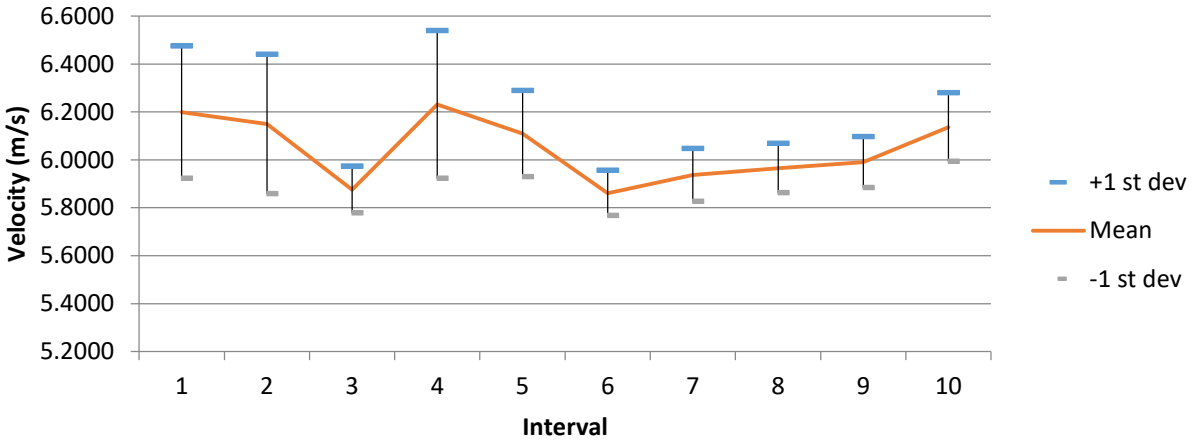
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 89
Blockage Condition: all Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: C2
First Sample Date: 14-Aug-13
First Sample Time: 07:53:33.453

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	6.3448	5.1857	5.6520	0.1177
u	5.8000	4.0000	4.7690	0.1811
v	-1.1800	-3.2400	-2.3862	0.2399
w	-0.6890	-2.7200	-1.8411	0.2025

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	6.0808	5.2231	5.6896	0.1119	1.7957
2	5.9376	5.2097	5.5380	0.0994	1.6806
3	5.9438	5.1857	5.5857	0.0939	1.6285
4	6.1085	5.3667	5.6963	0.0928	2.2099
5	6.3448	5.3565	5.6960	0.1259	2.1359
6	6.0913	5.2145	5.6629	0.1210	1.5236
7	6.0329	5.3751	5.7147	0.0871	1.5916
8	6.0723	5.2992	5.6873	0.0905	2.0263
9	6.1539	5.2544	5.6153	0.1138	1.7686
10	5.9635	5.2798	5.6338	0.0996	1.8326
		Average	5.6520	0.1036	1.8193
		St Dev	0.0574	0.0136	0.2223

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	4.9831	-2.2039	-1.6051	0.1580	0.2428	0.1849	3.1716	4.8715	3.7106
2	4.7463	-2.1470	-1.8656	0.1323	0.1502	0.1485	2.7881	3.1645	3.1280
3	4.5450	-2.3987	-2.1718	0.1339	0.1996	0.1537	2.9461	4.3908	3.3819
4	4.6638	-2.6158	-1.9508	0.1526	0.1305	0.1334	3.2722	2.7982	2.8610
5	4.6946	-2.6553	-1.8067	0.1927	0.2010	0.1692	4.1056	4.2826	3.6036
6	4.7996	-2.3777	-1.8145	0.1512	0.2314	0.1560	3.1510	4.8207	3.2494
7	4.8269	-2.4867	-1.7700	0.1334	0.0854	0.1599	2.7642	1.7698	3.3120
8	4.8165	-2.4527	-1.7569	0.1281	0.1366	0.1314	2.6588	2.8363	2.7284
9	4.8138	-2.2263	-1.8312	0.1190	0.1828	0.1204	2.4712	3.7982	2.5009
10	4.8007	-2.2980	-1.8381	0.1141	0.1427	0.1021	2.3772	2.9734	2.1273

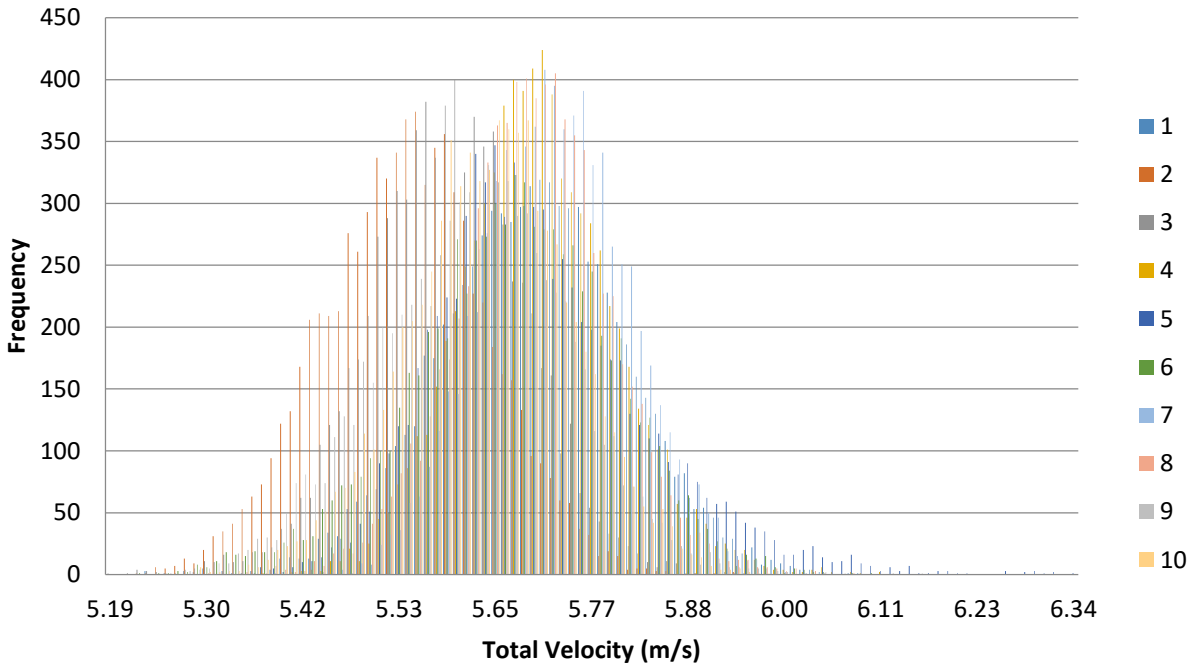


Figure 1. Velocity histogram for each interval (100 bins).

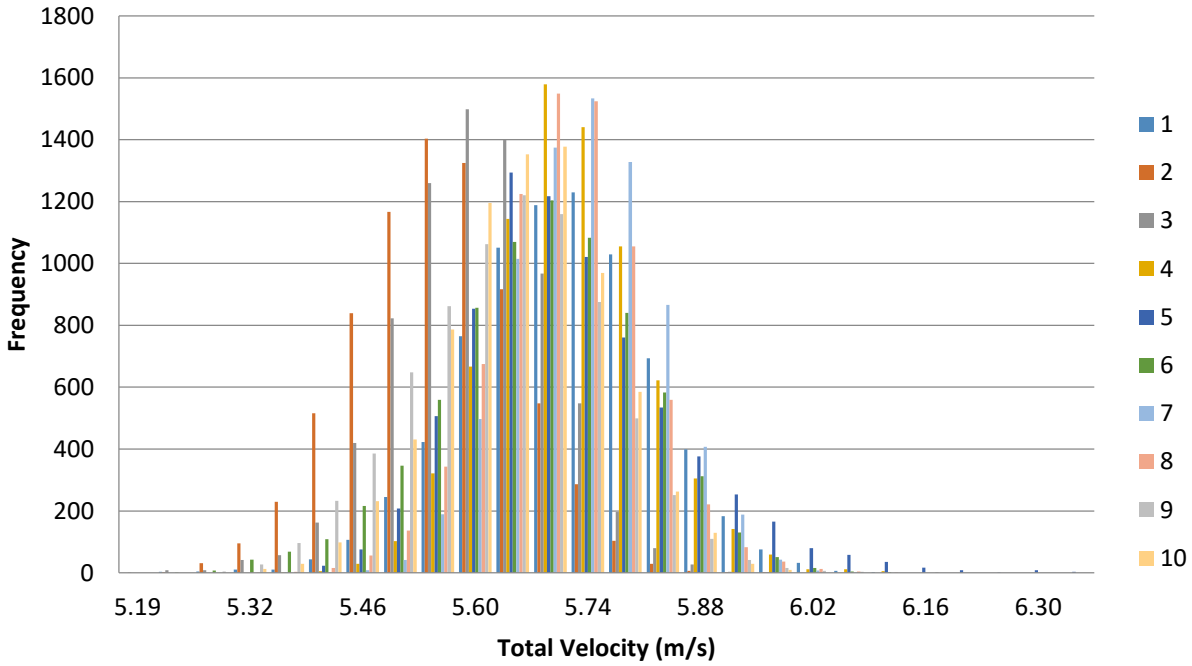
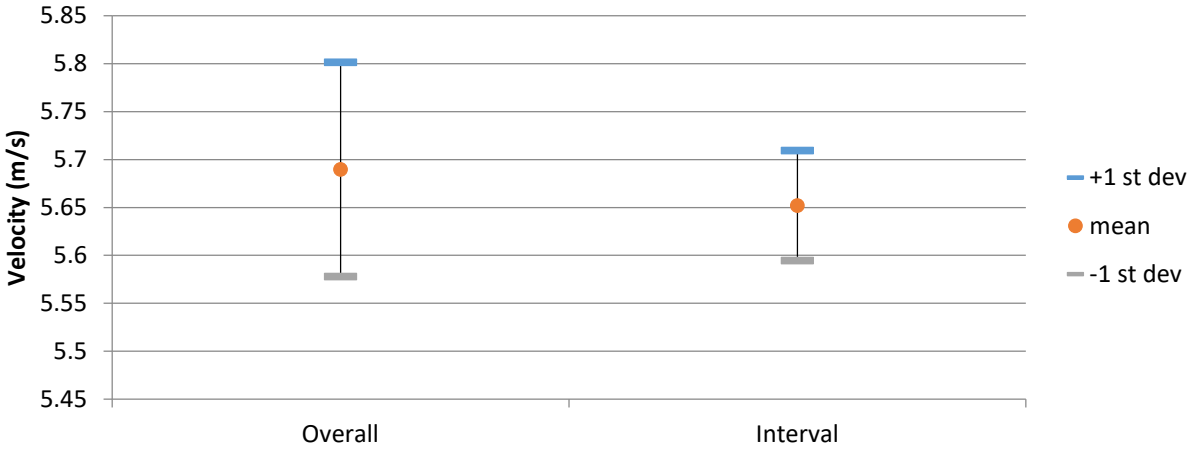
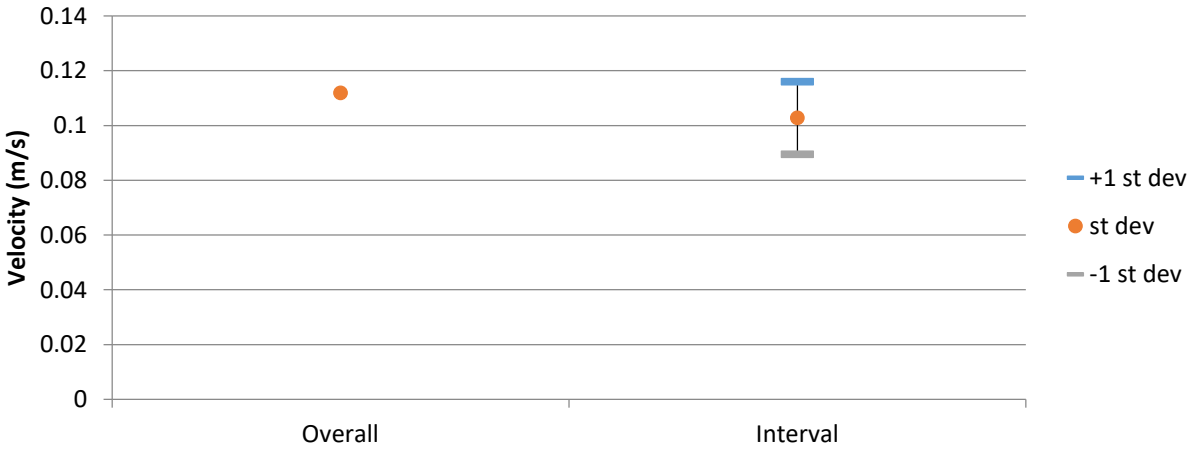


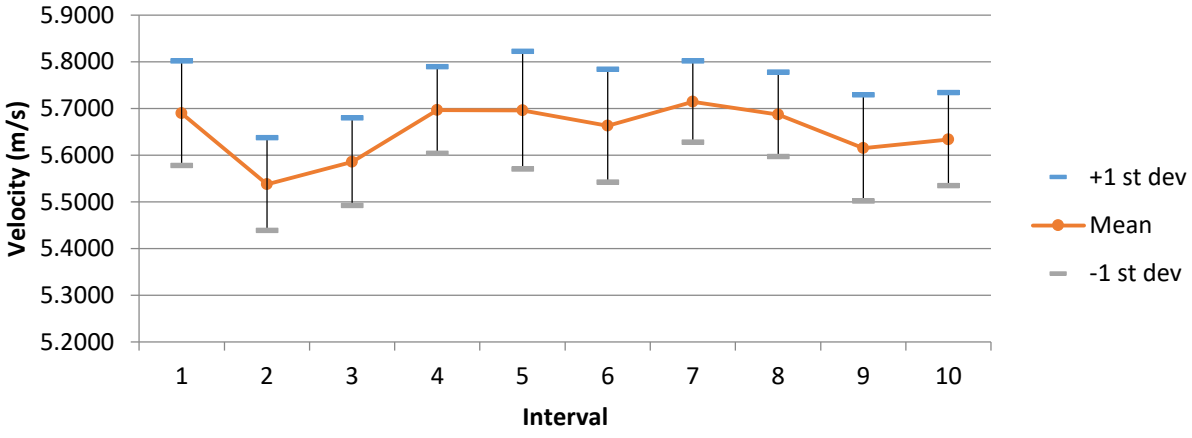
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 90
Blockage Condition: All Buildings
Blower Frequency: 25 Hz
Inlet Probe Location: C3
First Sample Date: 14-Aug-13
First Sample Time: 07:55:21.078

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.9285	4.5455	4.9947	0.1044
u	5.8300	4.0800	4.7821	0.1758
v	1.2100	-2.3700	-1.0279	0.4240
w	1.2800	-2.5400	-0.7454	0.5161

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.2440	4.6544	4.9607	0.0779	1.5147
2	5.2689	4.6737	5.0065	0.0758	2.2760
3	5.9285	4.6862	5.0557	0.1151	2.1714
4	5.6978	4.5855	5.0361	0.1094	2.4033
5	5.6914	4.5537	5.0607	0.1216	2.0095
6	5.4507	4.5614	4.9746	0.1000	1.7544
7	5.2795	4.6678	4.9760	0.0873	1.7385
8	5.3576	4.6619	4.9401	0.0859	1.7766
9	5.2787	4.6698	4.9594	0.0881	1.8003
10	5.4556	4.5455	4.9771	0.0896	1.9032
		Average	4.9947	0.0951	1.9348
		St Dev	0.0427	0.0157	0.2625

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	4.8563	-0.8713	-0.4657	0.0877	0.1754	0.1300	1.8068	3.6119	2.6769
2	4.9024	-0.9309	-0.2827	0.0850	0.1979	0.2111	1.7344	4.0373	4.3066
3	5.0009	-0.5998	-0.0293	0.1214	0.2929	0.3215	2.4277	5.8567	6.4298
4	4.9693	-0.5074	-0.4690	0.1149	0.2434	0.3605	2.3125	4.8988	7.2536
5	4.7260	-0.7362	-1.5478	0.2086	0.3913	0.3955	4.4129	8.2788	8.3678
6	4.6071	-1.5448	-1.0069	0.1107	0.2064	0.2759	2.4025	4.4806	5.9878
7	4.7241	-1.0386	-1.1067	0.0841	0.2456	0.2842	1.7799	5.1986	6.0155
8	4.6221	-1.5413	-0.7659	0.0760	0.1428	0.2448	1.6432	3.0901	5.2969
9	4.6744	-1.2844	-0.9675	0.0879	0.2550	0.3075	1.8813	5.4551	6.5788
10	4.7386	-1.2242	-0.8125	0.1037	0.1802	0.3506	2.1887	3.8033	7.3981

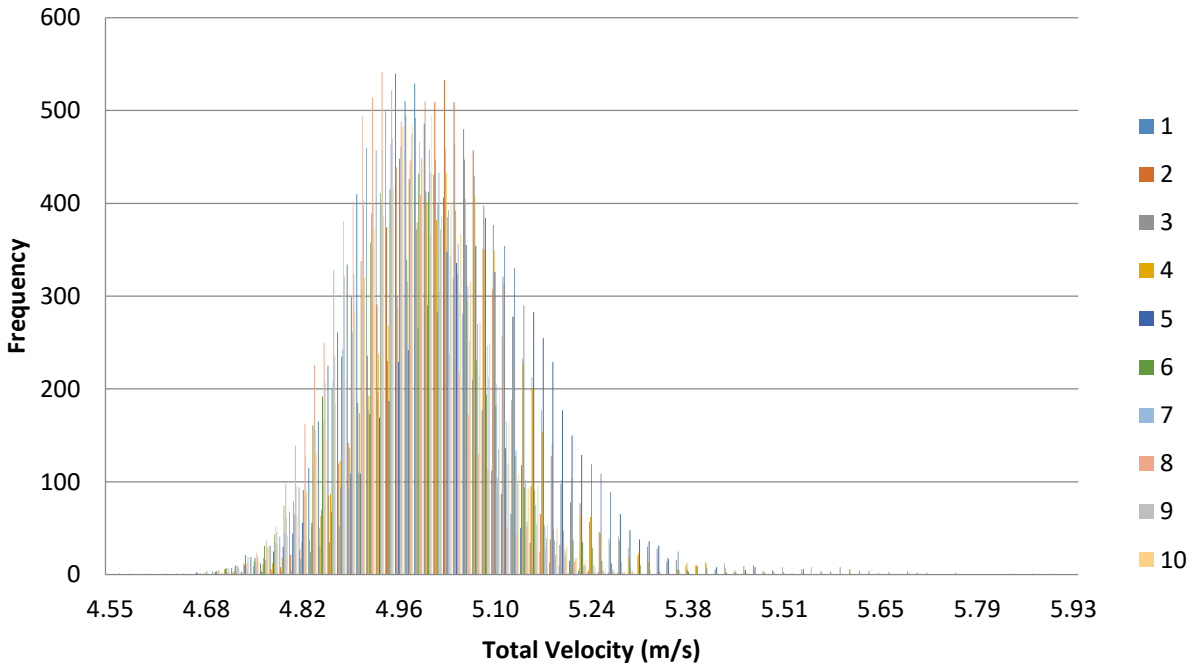


Figure 1. Velocity histogram for each interval (100 bins).

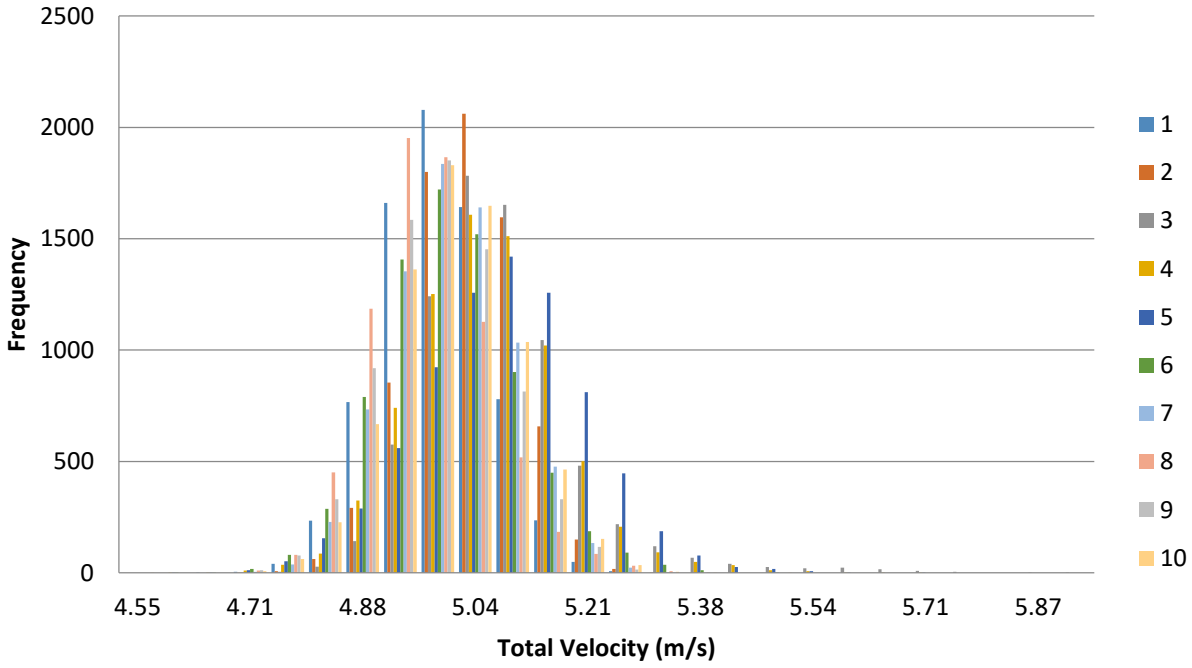
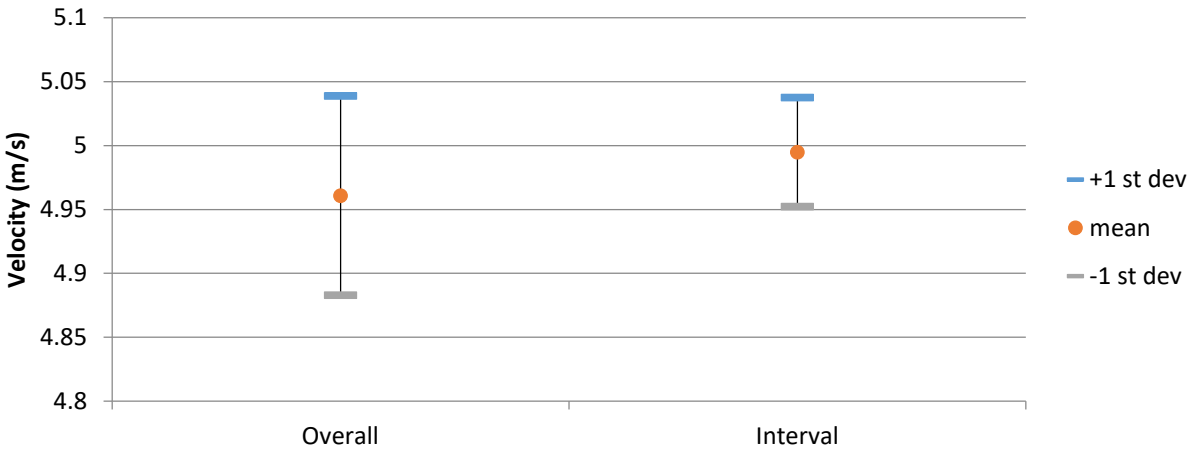
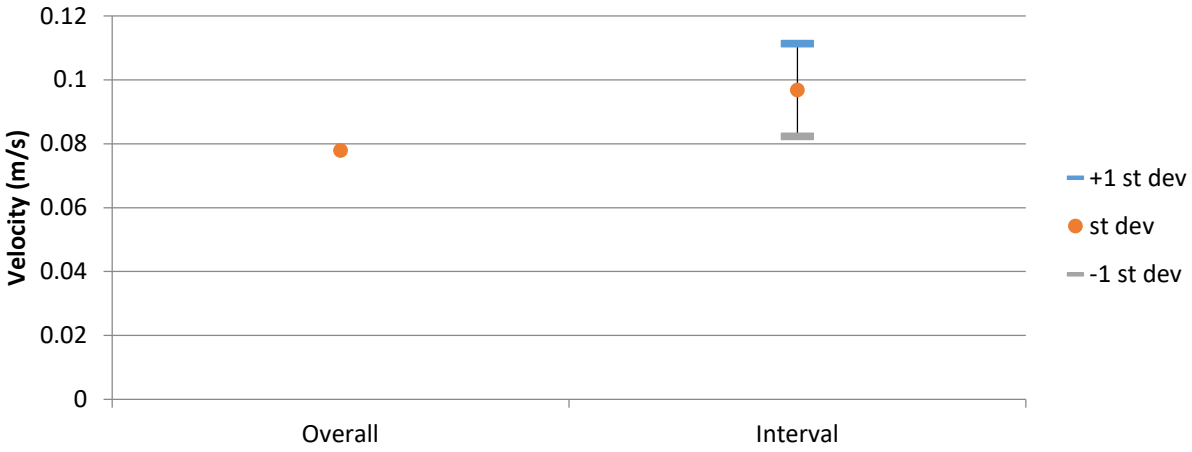


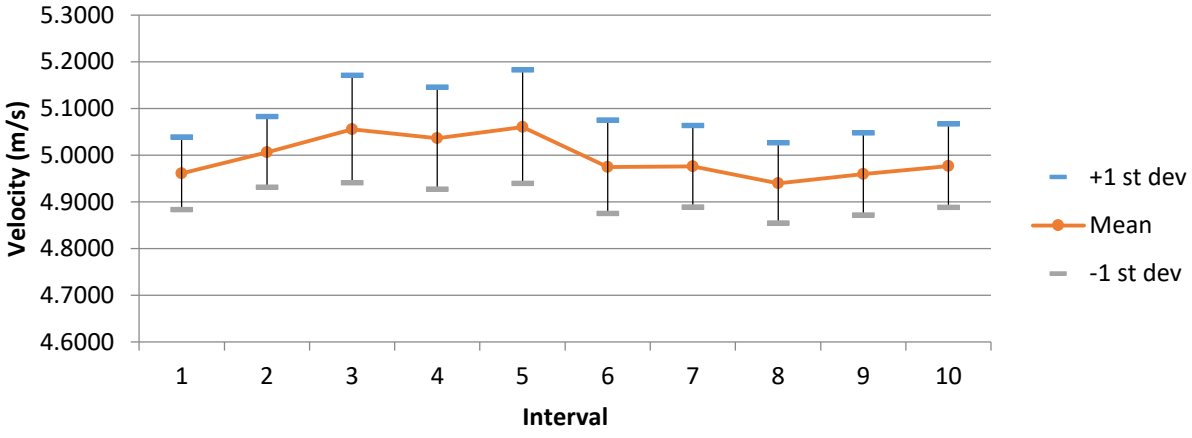
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 91
Blockage Condition: All Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: C4
First Sample Date: 14-Aug-13
First Sample Time: 07:57:16.500

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.4026	4.1917	4.8589	0.1494
u	4.9900	3.7000	4.3726	0.1589
v	-1.6700	-2.5700	-2.0785	0.1346
w	0.1580	-0.8470	-0.3605	0.1328

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.3574	4.2854	4.8275	0.1452	3.1186
2	5.3276	4.3166	4.8435	0.1511	2.9007
3	5.4026	4.3648	4.8408	0.1404	2.8975
4	5.3275	4.3373	4.8730	0.1412	3.1103
5	5.3993	4.3677	4.8884	0.1520	2.8483
6	5.3489	4.4095	4.8925	0.1393	2.9663
7	5.4004	4.3356	4.8906	0.1451	2.8408
8	5.3647	4.3864	4.8928	0.1390	3.1030
9	5.3096	4.2712	4.8266	0.1498	3.2977
10	5.3590	4.1917	4.8133	0.1587	3.0086
		Average	4.8589	0.1462	3.0092
		St Dev	0.0317	0.0066	0.1395

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	4.3729	-1.9814	-0.4847	0.1517	0.0996	0.0954	3.4696	2.2783	2.1813
2	4.3335	-2.1121	-0.4254	0.1618	0.0754	0.1716	3.7333	1.7395	3.9595
3	4.3477	-2.0781	-0.4368	0.1498	0.0992	0.0963	3.4446	2.2806	2.2141
4	4.3961	-2.0721	-0.3249	0.1521	0.0892	0.0979	3.4597	2.0295	2.2263
5	4.4275	-2.0419	-0.3353	0.1567	0.0664	0.0797	3.5395	1.4996	1.8005
6	4.4031	-2.0908	-0.4041	0.1467	0.0553	0.0945	3.3308	1.2561	2.1470
7	4.3276	-2.2422	-0.3507	0.1639	0.1203	0.1364	3.7862	2.7804	3.1520
8	4.3288	-2.2475	-0.3498	0.1543	0.1171	0.0942	3.5640	2.7047	2.1762
9	4.3887	-1.9869	-0.2553	0.1537	0.0834	0.1208	3.5031	1.8993	2.7535
10	4.4004	-1.9322	-0.2382	0.1607	0.0892	0.0780	3.6518	2.0270	1.7732

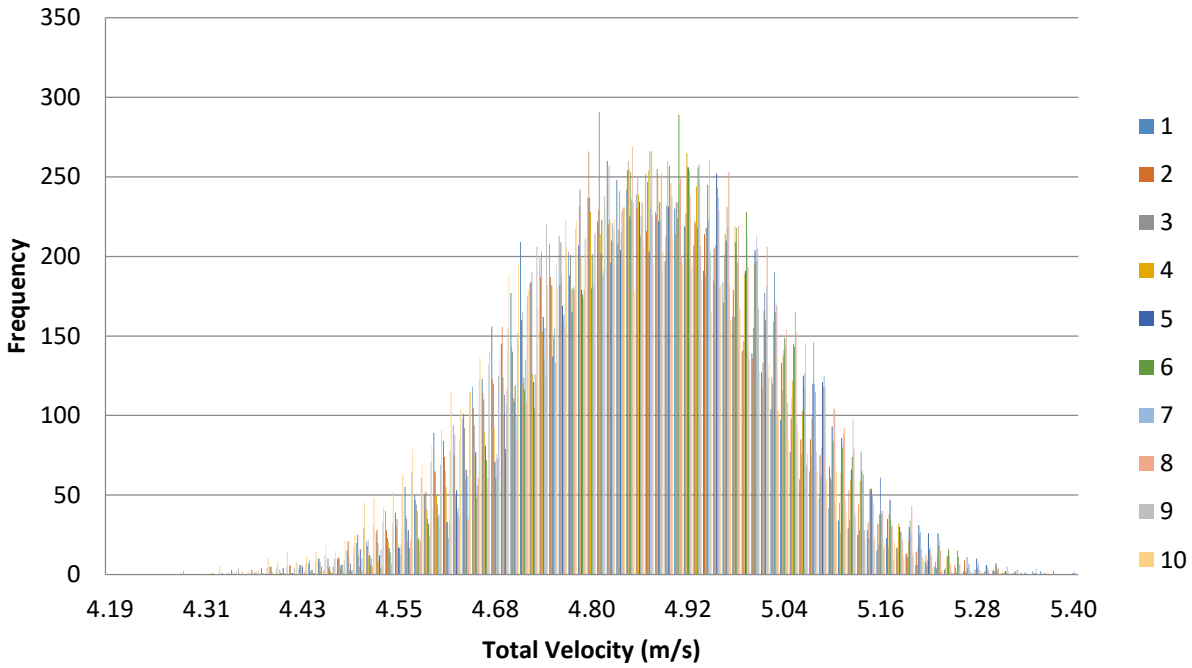


Figure 1. Velocity histogram for each interval (100 bins).

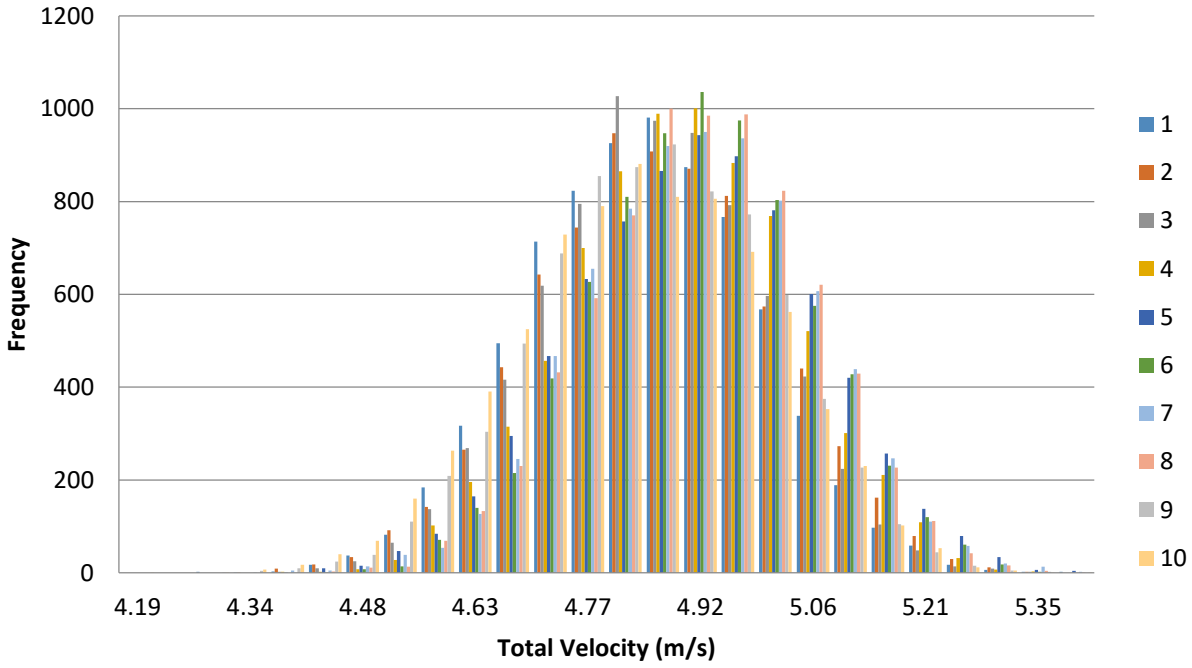
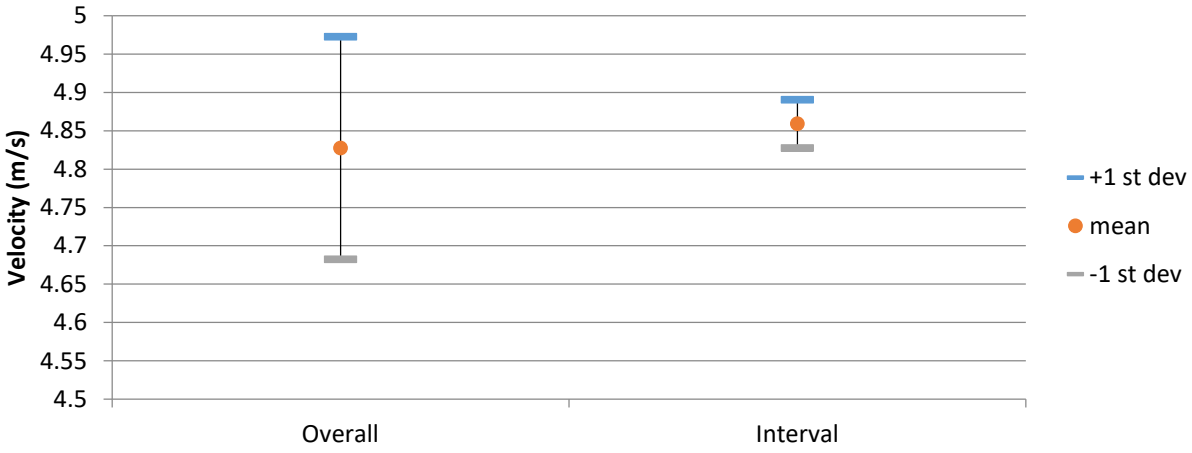
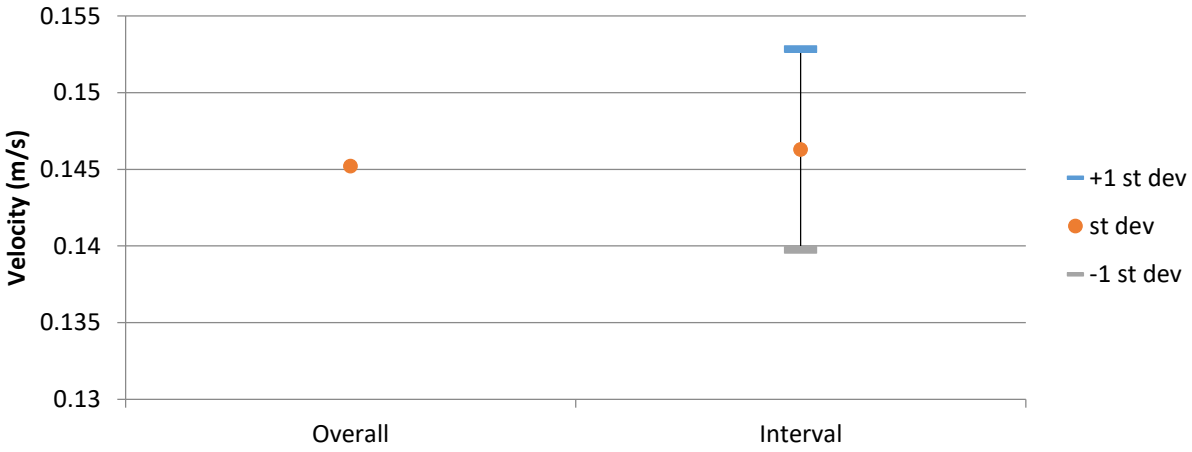


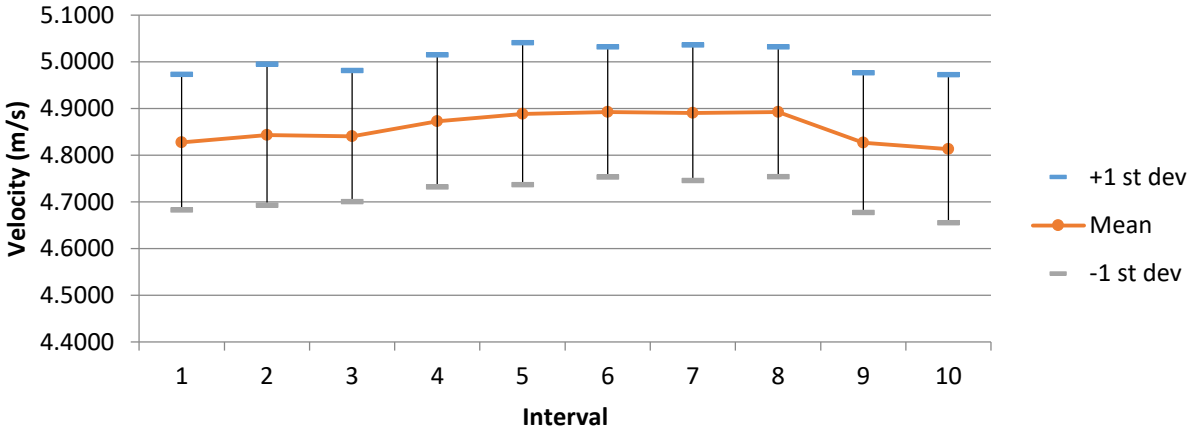
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 92
Blockage Condition: All buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: C5
First Sample Date: 14-Aug-13
First Sample Time: 07:58:49.140

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.0291	4.3792	4.7301	0.0777
u	4.6000	3.9200	4.2733	0.0926
v	-1.4400	-2.3200	-2.0114	0.1152
w	0.2220	-0.5630	-0.1902	0.1212

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	4.9755	4.4006	4.6861	0.0791	1.6565
2	4.9747	4.3792	4.6951	0.0778	1.4284
3	4.9863	4.4698	4.7095	0.0673	1.5616
4	4.9938	4.4401	4.7186	0.0737	1.5254
5	4.9869	4.4690	4.7332	0.0722	1.5367
6	4.9964	4.4944	4.7489	0.0730	1.5402
7	5.0291	4.5035	4.7595	0.0733	1.5338
8	5.0203	4.4761	4.7486	0.0728	1.5191
9	4.9957	4.4848	4.7579	0.0723	1.5465
10	4.9925	4.4667	4.7435	0.0734	1.5535
		Average	4.7301	0.0735	1.5402
		St Dev	0.0263	0.0032	0.0524

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	4.2924	-1.8716	-0.0373	0.0977	0.1439	0.0803	2.2754	3.3536	1.8702
2	4.2744	-1.9195	-0.2702	0.0866	0.0972	0.0668	2.0262	2.2742	1.5638
3	4.2133	-2.0702	-0.3657	0.0723	0.0450	0.0682	1.7166	1.0690	1.6178
4	4.2006	-2.1390	-0.1886	0.0833	0.0533	0.0702	1.9829	1.2695	1.6703
5	4.2613	-2.0439	-0.2270	0.0872	0.0825	0.0813	2.0469	1.9357	1.9084
6	4.3341	-1.9207	-0.2553	0.0820	0.0761	0.0770	1.8927	1.7550	1.7761
7	4.2768	-2.0702	-0.2586	0.0846	0.0748	0.0377	1.9774	1.7495	0.8810
8	4.2759	-2.0588	-0.1352	0.0796	0.0559	0.0665	1.8611	1.3083	1.5556
9	4.3178	-1.9923	-0.0995	0.0820	0.0795	0.0828	1.8994	1.8410	1.9183
10	4.2862	-2.0282	-0.0649	0.0818	0.0812	0.0583	1.9081	1.8953	1.3608

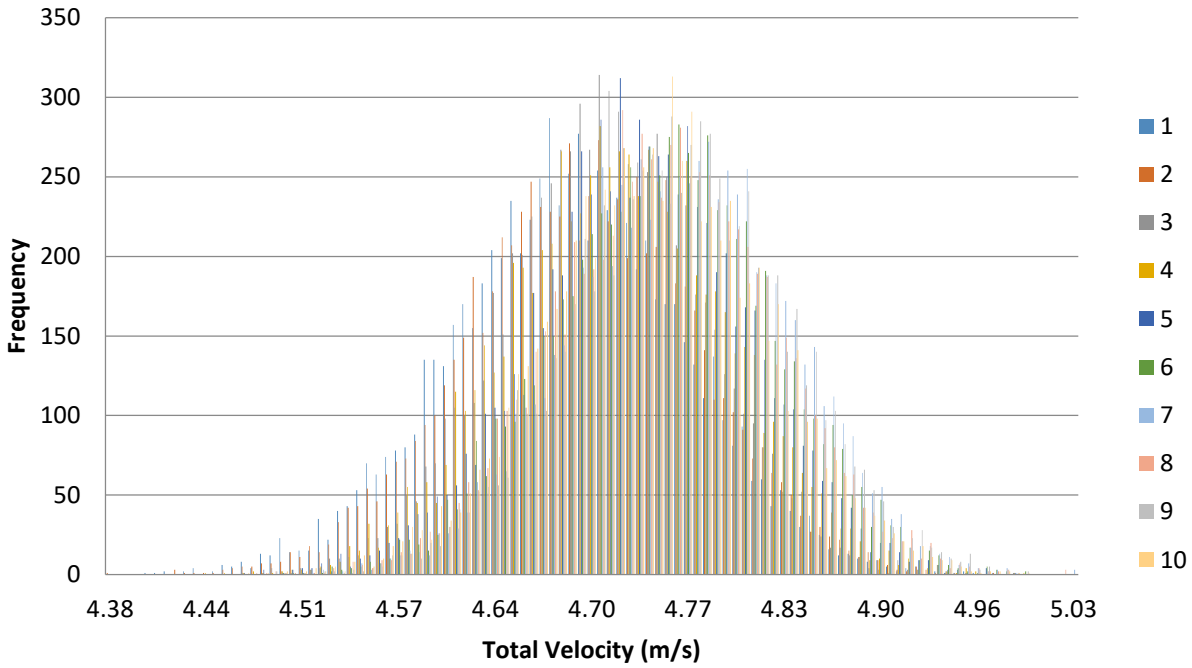


Figure 1. Velocity histogram for each interval (100 bins).

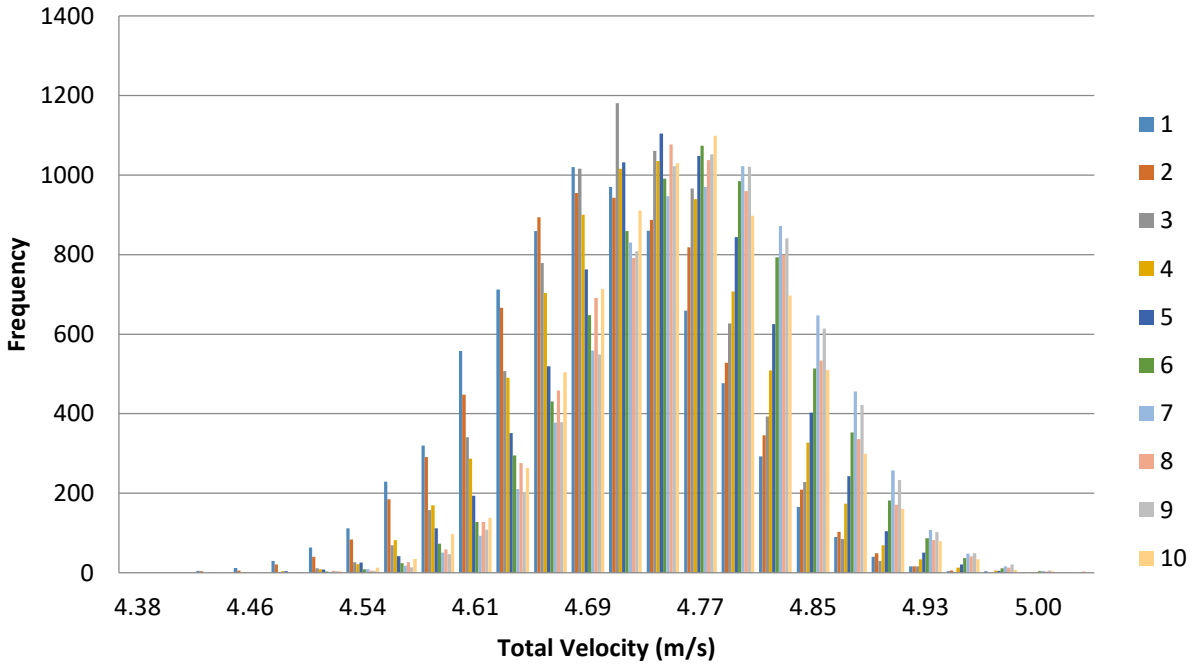
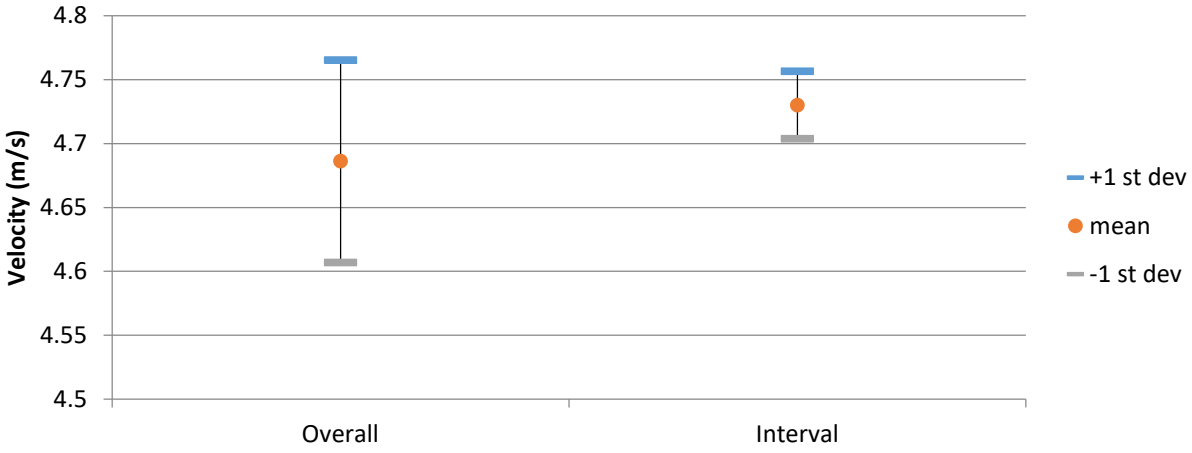
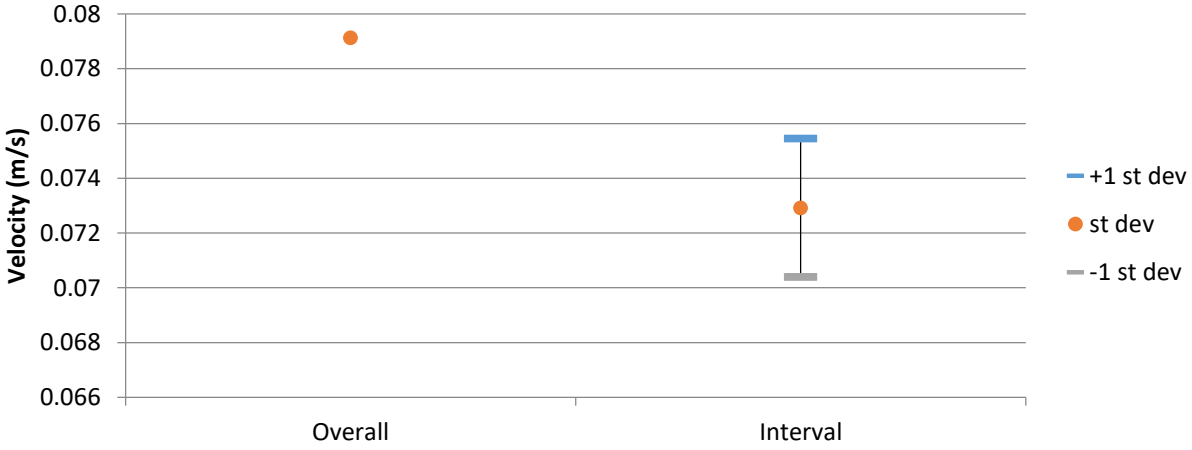


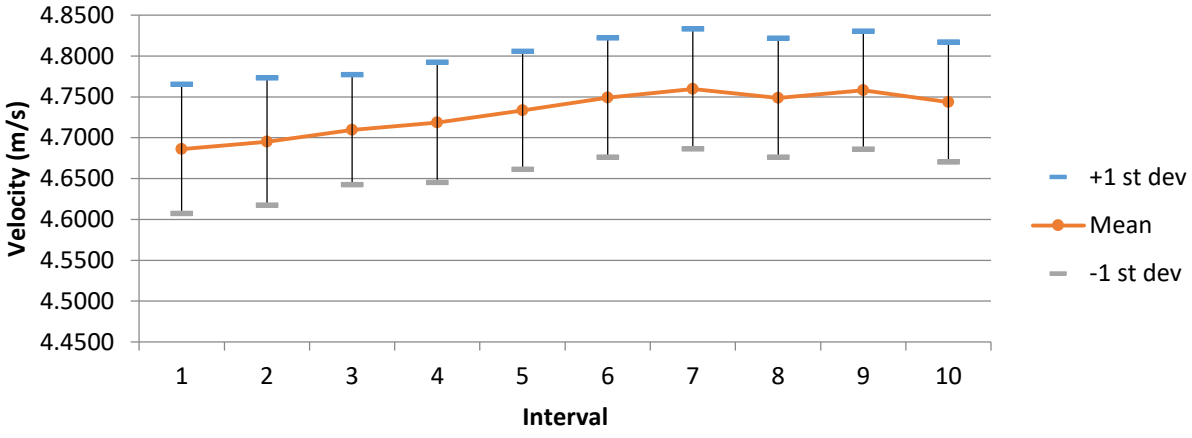
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 93
Blockage Condition: All buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: B5
First Sample Date: 14-Aug-13
First Sample Time: 08:00:25.734

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	4.5161	3.7956	4.2013	0.0875
u	3.8300	2.8500	3.3640	0.1145
v	-2.1500	-2.7500	-2.5098	0.0922
w	0.5530	-0.1740	0.1242	0.0760

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	4.4331	3.8602	4.1722	0.0798	1.9117	0	0.00 %
2	4.4705	3.8991	4.1997	0.0806	1.9186	0	0.00 %
3	4.4780	3.8634	4.2061	0.0815	1.9371	0	0.00 %
4	4.4814	3.8350	4.1746	0.0844	2.0219	0	0.00 %
5	4.5014	3.7956	4.1782	0.0864	2.0681	1	0.01 %
6	4.4690	3.8513	4.1734	0.0843	2.0205	0	0.00 %
7	4.4883	3.8828	4.1838	0.0864	2.0652	0	0.00 %
8	4.5150	3.9196	4.2278	0.0826	1.9542	0	0.00 %
9	4.5161	3.9358	4.2432	0.0787	1.8555	0	0.00 %
10	4.5007	3.9746	4.2541	0.0797	1.8724	0	0.00 %
		Average	4.2013	0.0824	1.9625		
		St dev	0.0291	0.0027	0.0731		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	3.2802	-2.5752	0.0933	0.1011	0.0365	0.0373	3.0830	1.1124	1.1374
2	3.3586	-2.5153	0.1516	0.1018	0.0371	0.0456	3.0310	1.1056	1.3569
3	3.4170	-2.4402	0.2033	0.1144	0.0875	0.0733	3.3467	2.5605	2.1462
4	3.3952	-2.4248	0.0987	0.1105	0.0567	0.0499	3.2546	1.6709	1.4711
5	3.3641	-2.4729	0.1169	0.1132	0.0547	0.0519	3.3655	1.6271	1.5418
6	3.3817	-2.4336	0.1646	0.1253	0.0874	0.1245	3.7041	2.5836	3.6806
7	3.3798	-2.4597	0.0861	0.1163	0.0984	0.0873	3.4399	2.9123	2.5819
8	3.3493	-2.5747	0.1405	0.1044	0.0352	0.0454	3.1168	1.0498	1.3552
9	3.3595	-2.5891	0.0871	0.1008	0.0354	0.0427	3.0007	1.0529	1.2704
10	3.3549	-2.6122	0.0996	0.1025	0.0401	0.0517	3.0564	1.1960	1.5414

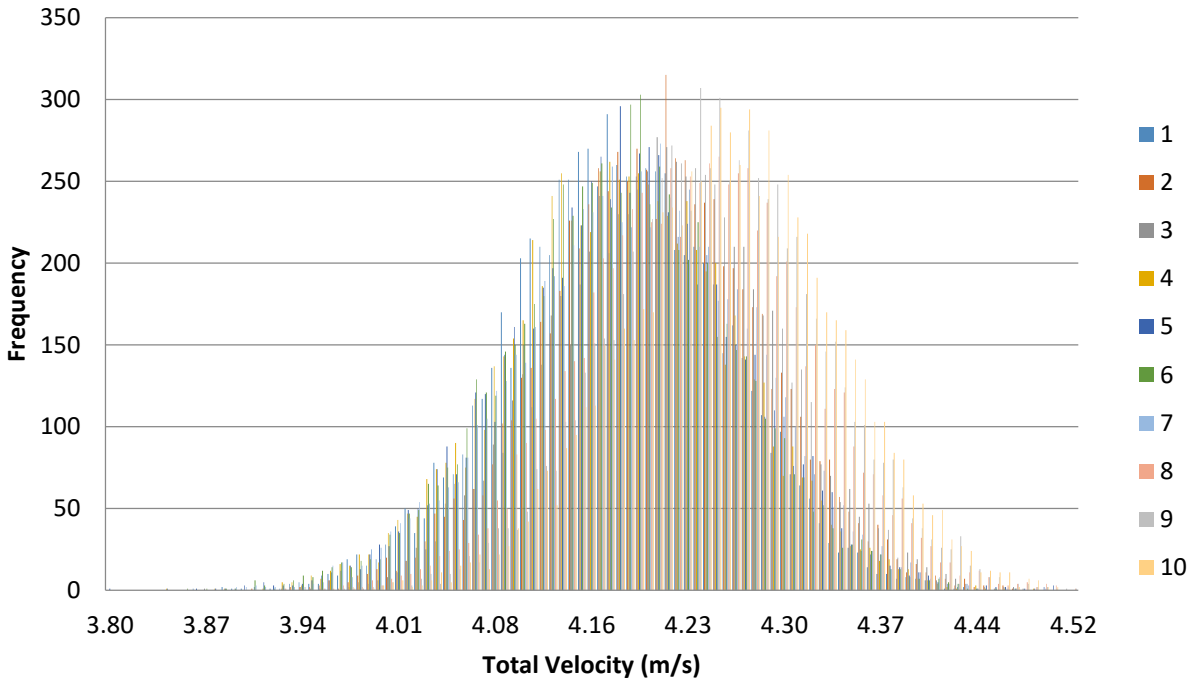


Figure 1. Velocity histogram for each interval (100 bins).

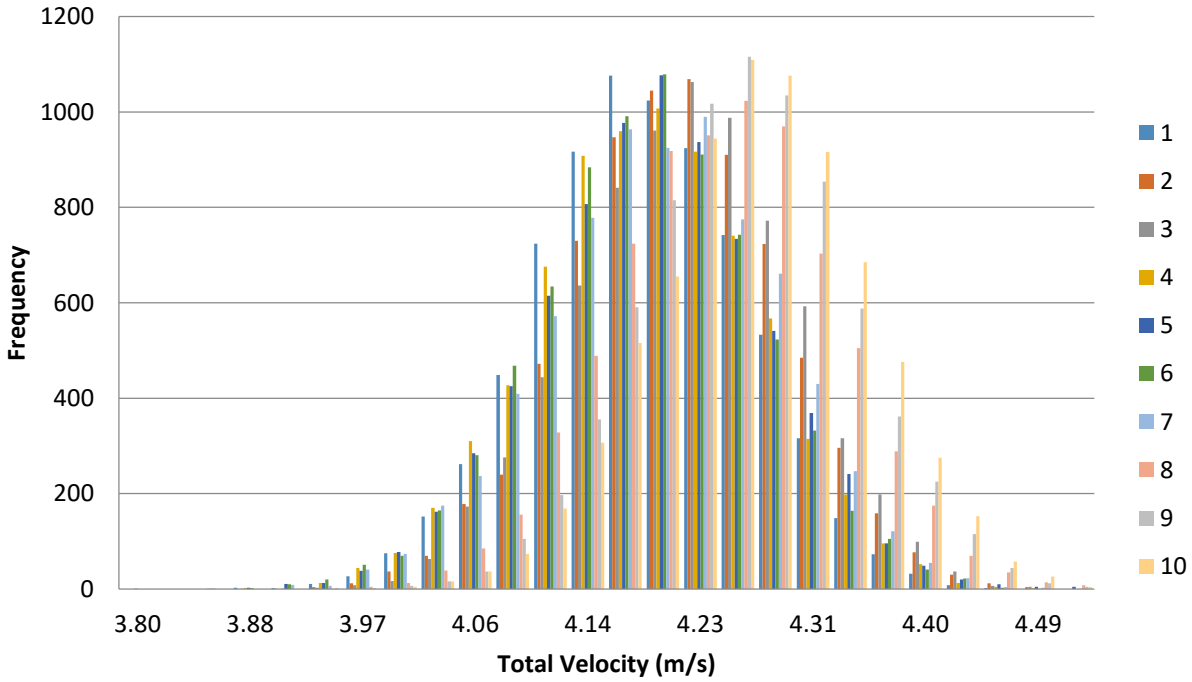
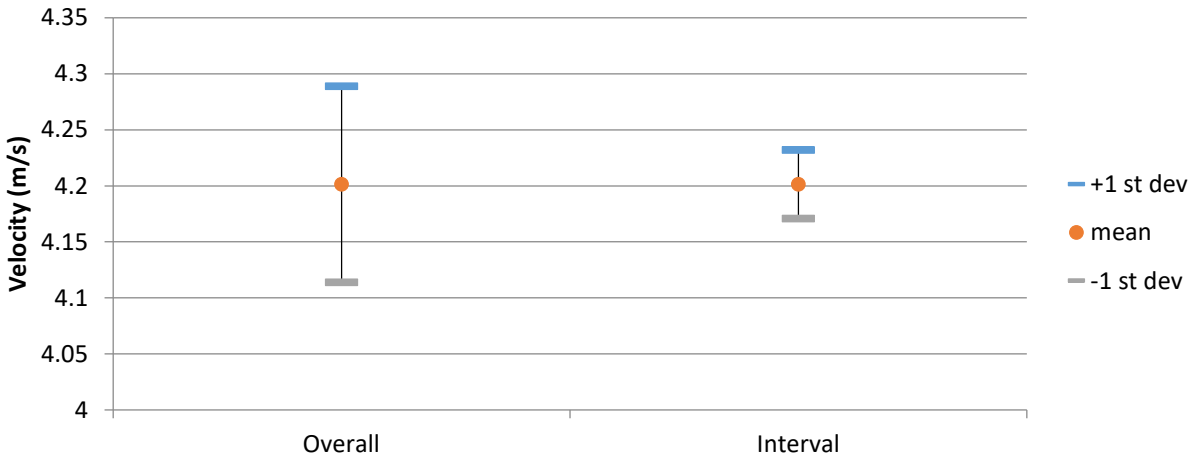
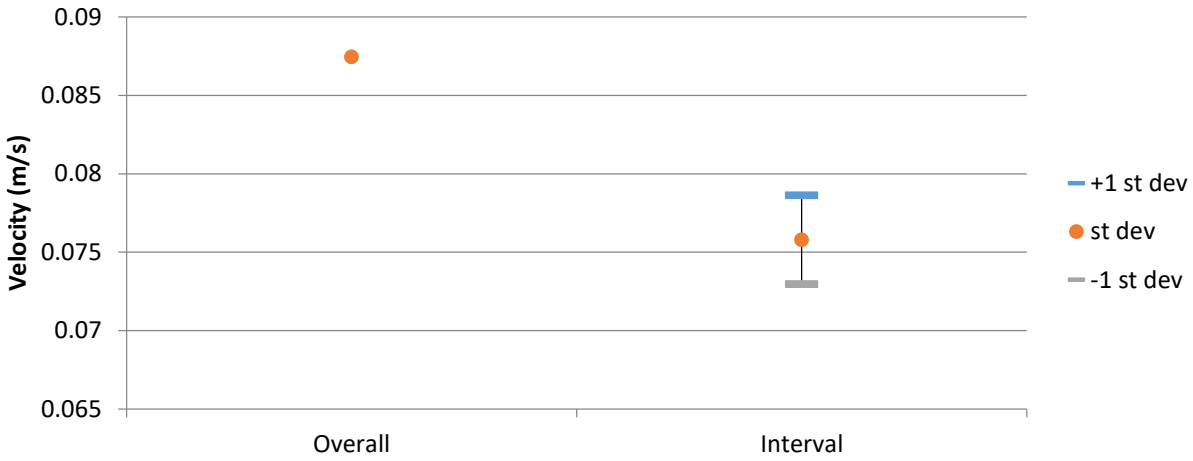


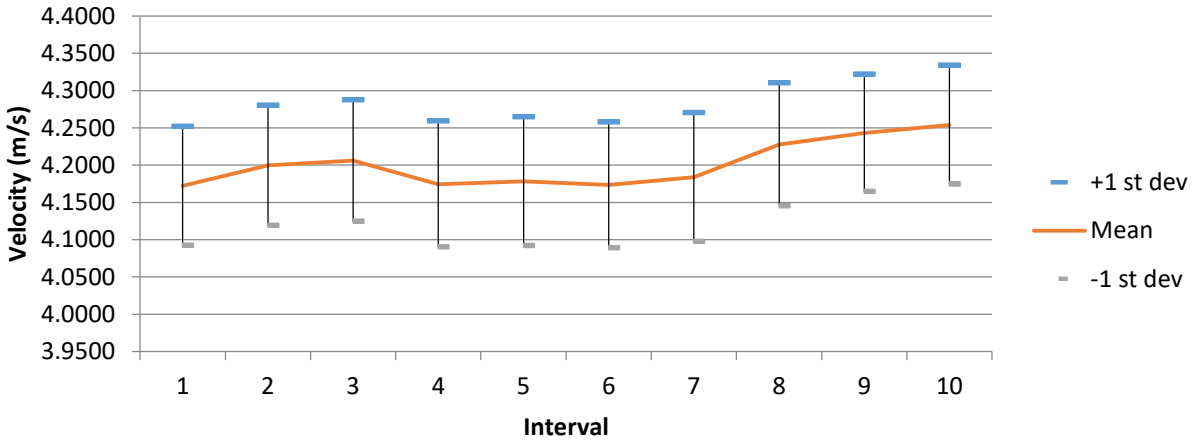
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 94
Blockage Condition: All buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: B4
First Sample Date: 14-Aug-13
First Sample Time: 08:02:10.500

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.0564	3.5726	4.2990	0.1802
u	4.4000	2.5300	3.4866	0.2177
v	-2.1900	-3.4600	-2.4959	0.0878
w	0.1360	-1.0600	-0.2420	0.1203

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.0564	3.5726	4.3676	0.1304	3.7327
2	4.9256	3.8041	4.3630	0.1629	3.9238
3	4.8831	3.8739	4.3873	0.1722	3.8957
4	4.9517	3.7259	4.3200	0.1683	3.7988
5	4.9003	3.8403	4.2792	0.1626	3.9985
6	4.8634	3.8502	4.2757	0.1710	4.3858
7	4.8661	3.6476	4.2368	0.1858	4.2442
8	4.8466	3.7106	4.2119	0.1788	4.4213
9	4.9198	3.6346	4.2577	0.1882	4.3383
10	4.8809	3.6791	4.2908	0.1861	3.9688
		Average	4.2990	0.1706	4.0708
		St Dev	0.0589	0.0170	0.2408

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	3.4926	-2.5950	-0.3442	0.1650	0.0536	0.1090	4.7244	1.5346	3.1216
2	3.5252	-2.5487	-0.2682	0.2058	0.0822	0.1357	5.8366	2.3306	3.8490
3	3.5452	-2.5562	-0.3308	0.2059	0.0711	0.1366	5.8074	2.0060	3.8530
4	3.5004	-2.5106	-0.2688	0.2180	0.0740	0.0984	6.2278	2.1129	2.8125
5	3.4337	-2.5390	-0.2271	0.2057	0.0510	0.0703	5.9915	1.4849	2.0469
6	3.4951	-2.4458	-0.2548	0.2112	0.0380	0.0462	6.0435	1.0872	1.3226
7	3.4643	-2.4254	-0.2134	0.2252	0.0345	0.0579	6.5016	0.9954	1.6715
8	3.4278	-2.4331	-0.2170	0.2195	0.0450	0.0690	6.4047	1.3129	2.0133
9	3.4448	-2.4834	-0.1965	0.2520	0.1021	0.1289	7.3158	2.9641	3.7417
10	3.5367	-2.4217	-0.0989	0.2214	0.0615	0.1007	6.2612	1.7402	2.8461

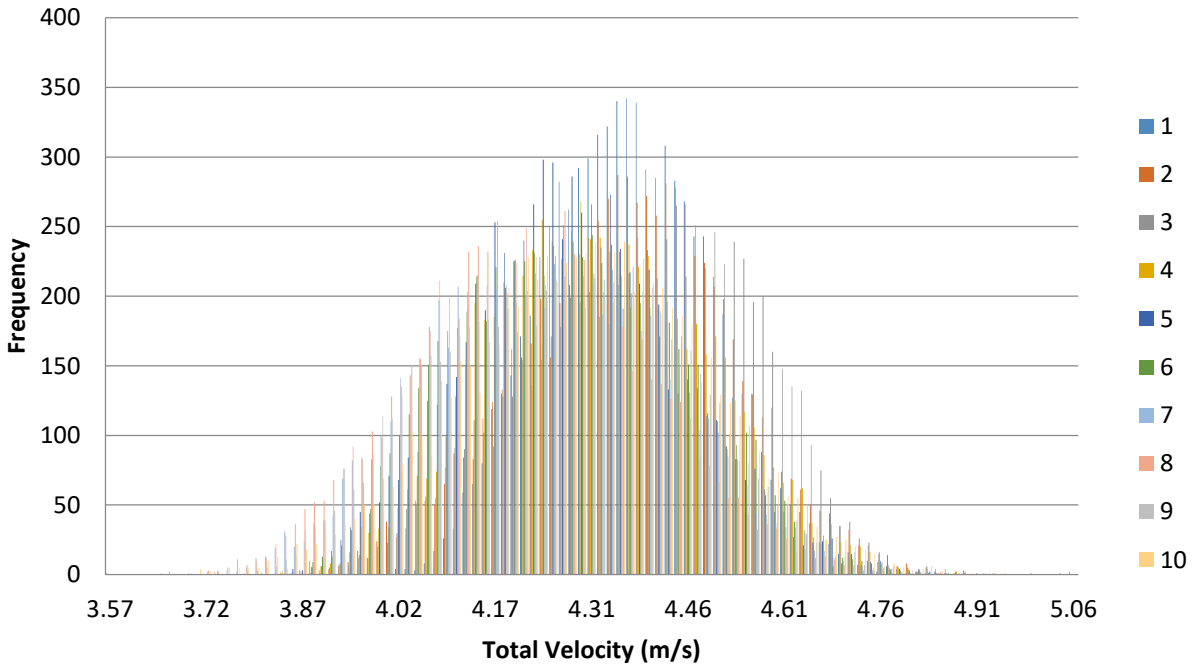


Figure 1. Velocity histogram for each interval (100 bins).

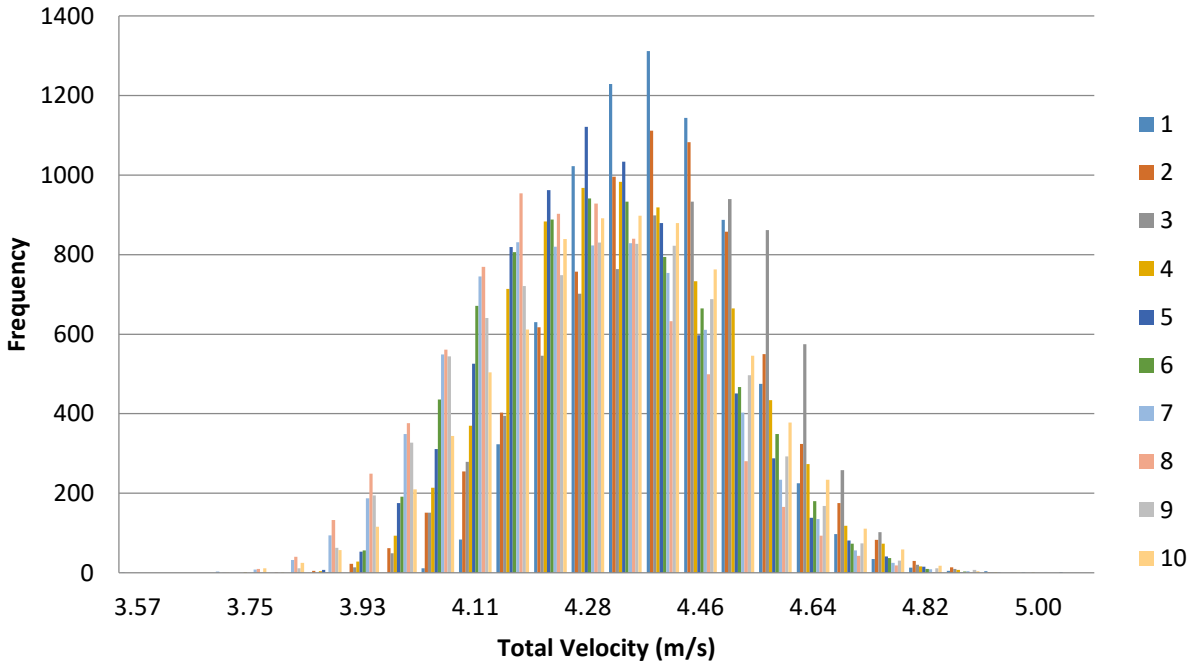
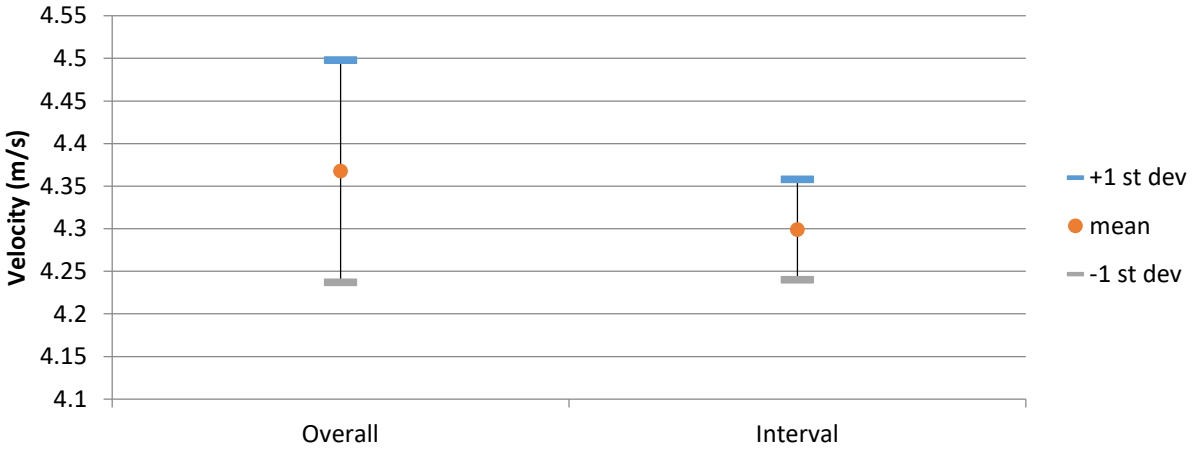
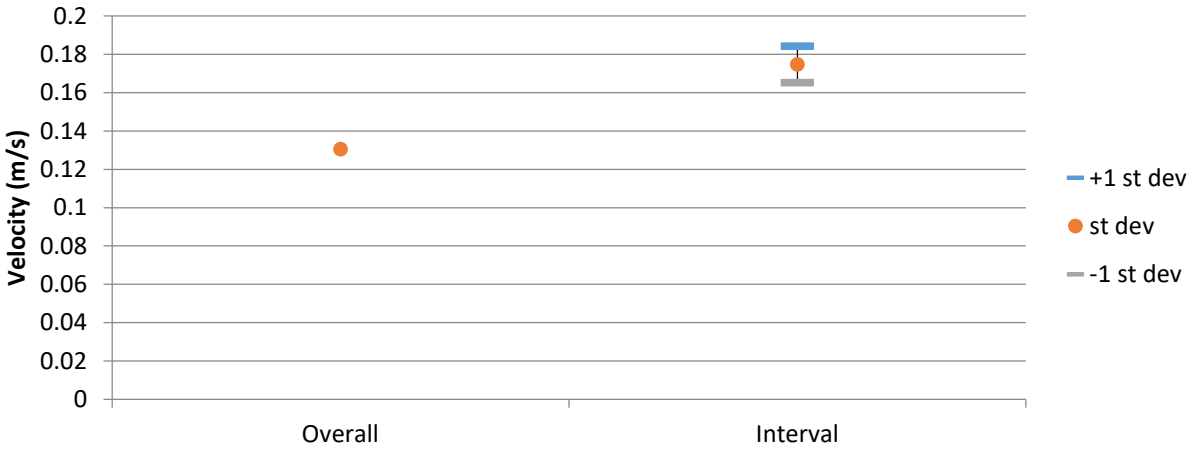


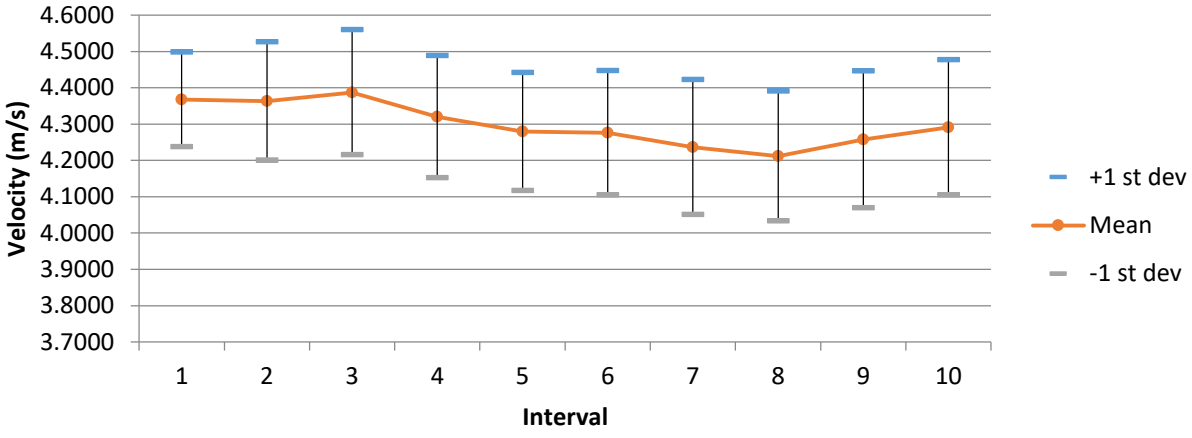
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 95
Blockage Condition: All buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: B3
First Sample Date: 14-Aug-13
First Sample Time: 08:03:37.390

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.2767	4.0653	4.7399	0.1455
u	4.2900	3.2100	3.9115	0.1135
v	-2.0700	-3.3500	-2.5580	0.1348
w	-0.2260	-1.2400	-0.7654	0.1675

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.1439	4.2798	4.6820	0.1044	2.3781
2	5.0173	4.2546	4.6461	0.1105	2.3352
3	5.1946	4.2970	4.7979	0.1120	2.6536
4	5.0882	4.2018	4.7047	0.1248	2.0837
5	4.9419	4.2058	4.6101	0.0961	2.4063
6	5.1829	4.3775	4.7746	0.1149	3.7162
7	5.1674	4.0653	4.7176	0.1753	3.3356
8	5.1920	4.1404	4.7826	0.1595	2.0268
9	5.2767	4.4217	4.8577	0.0985	2.4319
10	5.1498	4.4119	4.8261	0.1174	2.5599
		Average	4.7399	0.1213	2.5927
		St Dev	0.0806	0.0260	0.5071

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	3.9070	-2.4876	-0.6768	0.0838	0.0770	0.0916	2.1456	1.9701	2.3437
2	3.8934	-2.4392	-0.6772	0.0892	0.1000	0.1146	2.2907	2.5697	2.9436
3	3.9533	-2.5768	-0.8514	0.1039	0.1157	0.1211	2.6290	2.9267	3.0635
4	3.8701	-2.5902	-0.6540	0.1289	0.0811	0.1113	3.3316	2.0954	2.8770
5	3.9011	-2.3777	-0.6049	0.0898	0.0938	0.0877	2.3012	2.4044	2.2472
6	3.9371	-2.5694	-0.8200	0.0845	0.1127	0.1236	2.1474	2.8615	3.1388
7	3.8326	-2.6393	-0.7465	0.1453	0.0878	0.2144	3.7906	2.2908	5.5928
8	3.8866	-2.6700	-0.7814	0.1265	0.0990	0.1672	3.2559	2.5471	4.3015
9	3.9616	-2.6651	-0.8835	0.0905	0.1135	0.0877	2.2836	2.8658	2.2148
10	3.9726	-2.5643	-0.9581	0.0907	0.1010	0.1072	2.2829	2.5423	2.6974

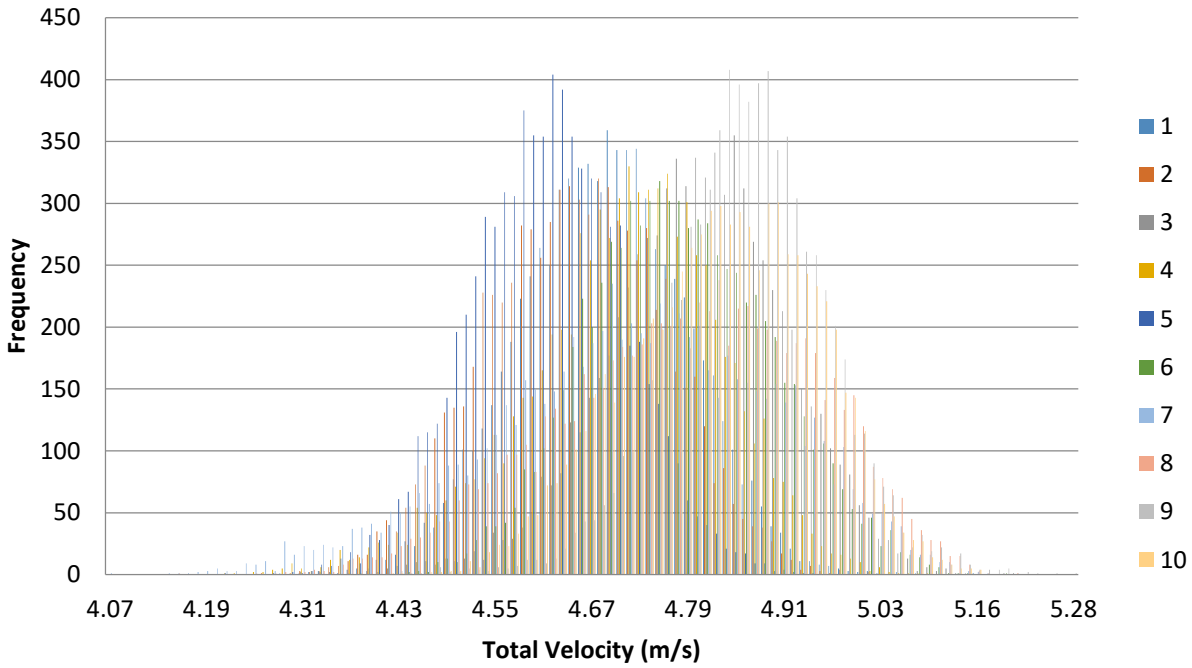


Figure 1. Velocity histogram for each interval (100 bins).

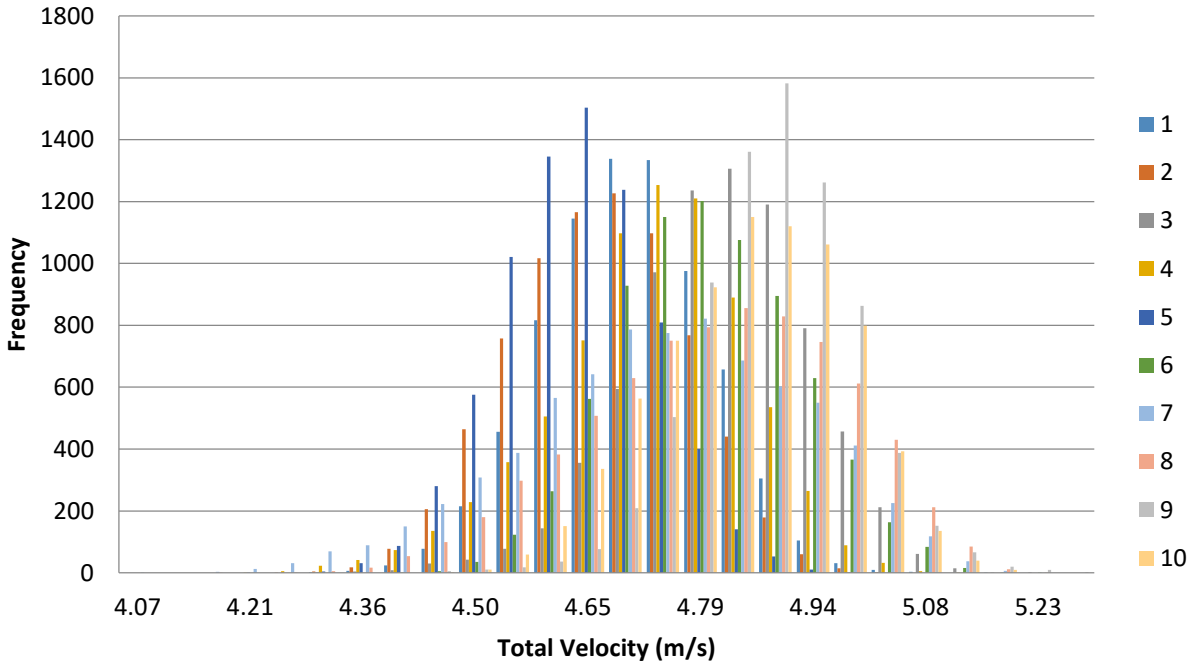
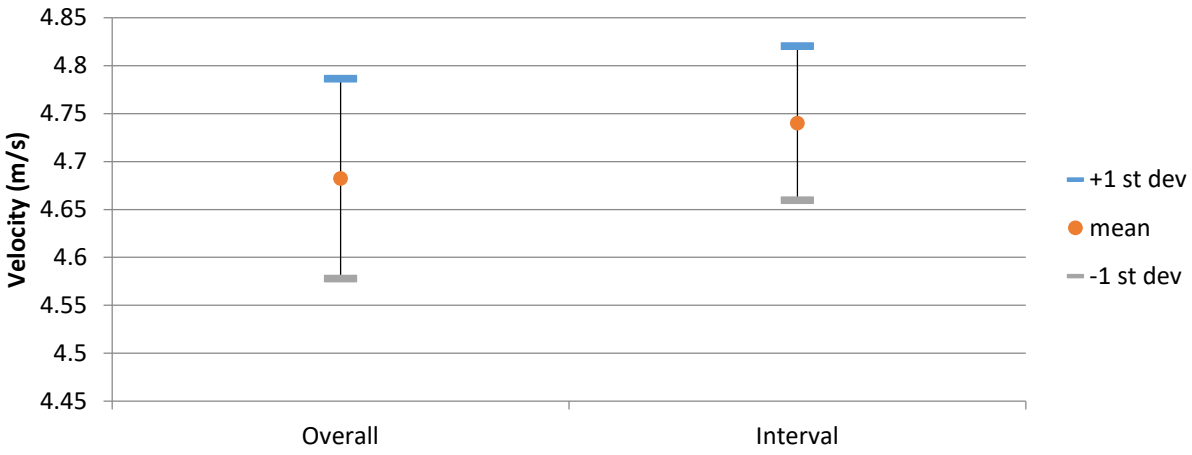
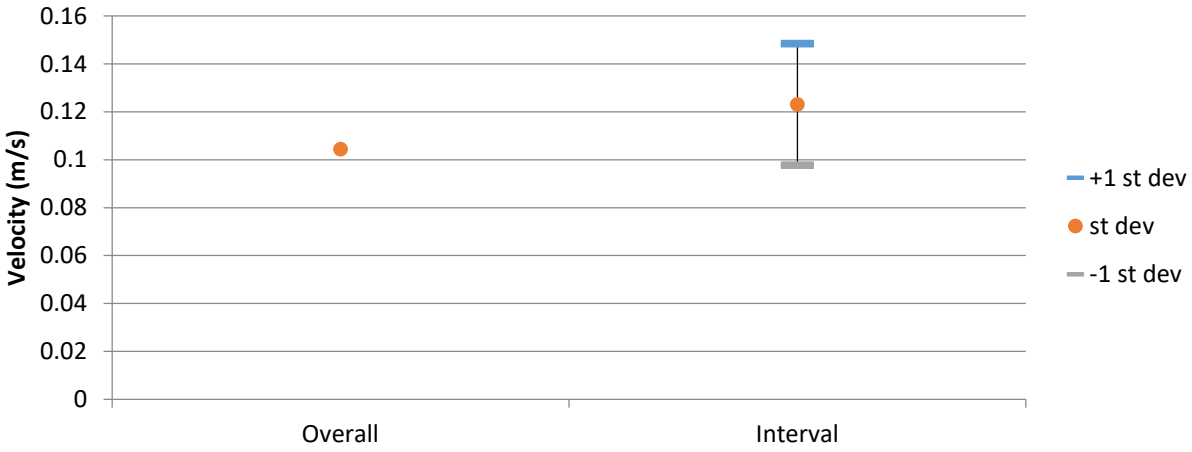


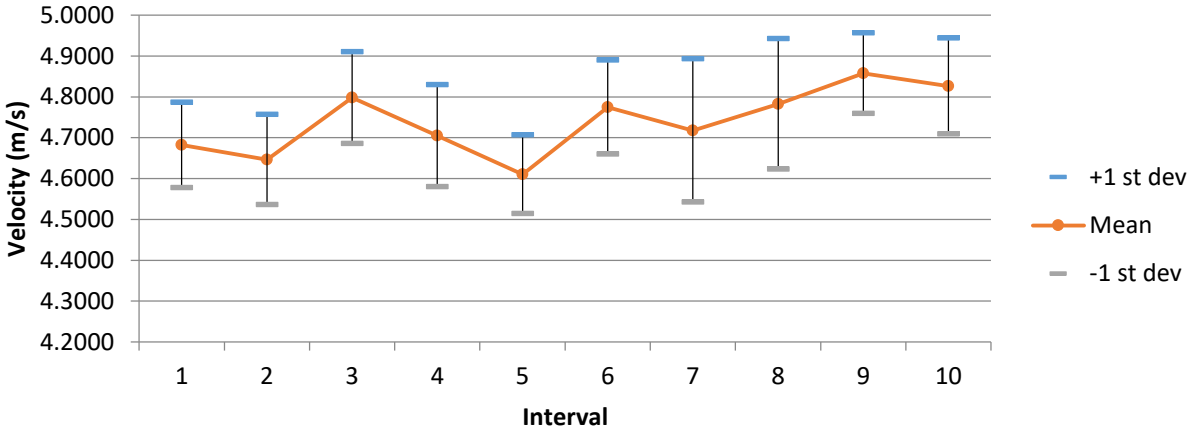
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 96
Blockage Condition: all Buildings
Blower Frequency: 25 Hz
Inlet Probe Location: B2
First Sample Date: 14-Aug-13
First Sample Time: 08:05:17.765

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	6.3267	1.6923	4.7984	0.1525
u	4.8100	1.1100	3.8467	0.2141
v	-0.2980	-3.6800	-2.4653	0.2144
w	0.5560	-3.6700	-1.4227	0.2384

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	6.3267	1.6923	4.7957	0.2491	5.1944	862	6.90 %
2	5.7536	4.0265	4.8371	0.1764	3.6462	0	0.00 %
3	5.1372	4.4844	4.7564	0.0894	1.8797	0	0.00 %
4	5.1611	4.4788	4.7614	0.0994	2.0877	0	0.00 %
5	5.0049	4.4511	4.7226	0.0793	1.6790	0	0.00 %
6	5.0734	4.4219	4.7046	0.0911	1.9360	0	0.00 %
7	5.3688	4.6270	4.9922	0.1029	2.0610	0	0.00 %
8	5.2556	4.4067	4.7446	0.1191	2.5095	0	0.00 %
9	5.1452	4.4458	4.7756	0.0932	1.9507	0	0.00 %
10	5.2333	4.5416	4.8934	0.0933	1.9077	0	0.00 %
		Average	4.7984	0.1193	2.4852		
		St dev	0.0832	0.0504	1.0471		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	3.9004	-2.1307	-1.6569	0.3637	0.4386	0.4871	9.3245	11.2458	12.4886
2	3.8747	-2.5121	-1.3988	0.2317	0.1964	0.2363	5.9806	5.0699	6.0997
3	3.8472	-2.4444	-1.3510	0.1223	0.0824	0.0905	3.1781	2.1428	2.3525
4	3.8298	-2.4495	-1.4007	0.1534	0.0771	0.1472	4.0049	2.0138	3.8434
5	3.7781	-2.3636	-1.5528	0.1322	0.1045	0.0963	3.4995	2.7671	2.5478
6	3.6386	-2.5045	-1.6038	0.1419	0.1446	0.1298	3.9012	3.9736	3.5666
7	4.0181	-2.6856	-1.2342	0.1543	0.0891	0.1414	3.8411	2.2181	3.5195
8	3.7210	-2.5318	-1.4895	0.1500	0.1042	0.1338	4.0304	2.7995	3.5971
9	3.8501	-2.4875	-1.3291	0.1455	0.0860	0.0922	3.7784	2.2341	2.3958
10	4.0155	-2.5046	-1.2375	0.1156	0.0761	0.0784	2.8791	1.8948	1.9514

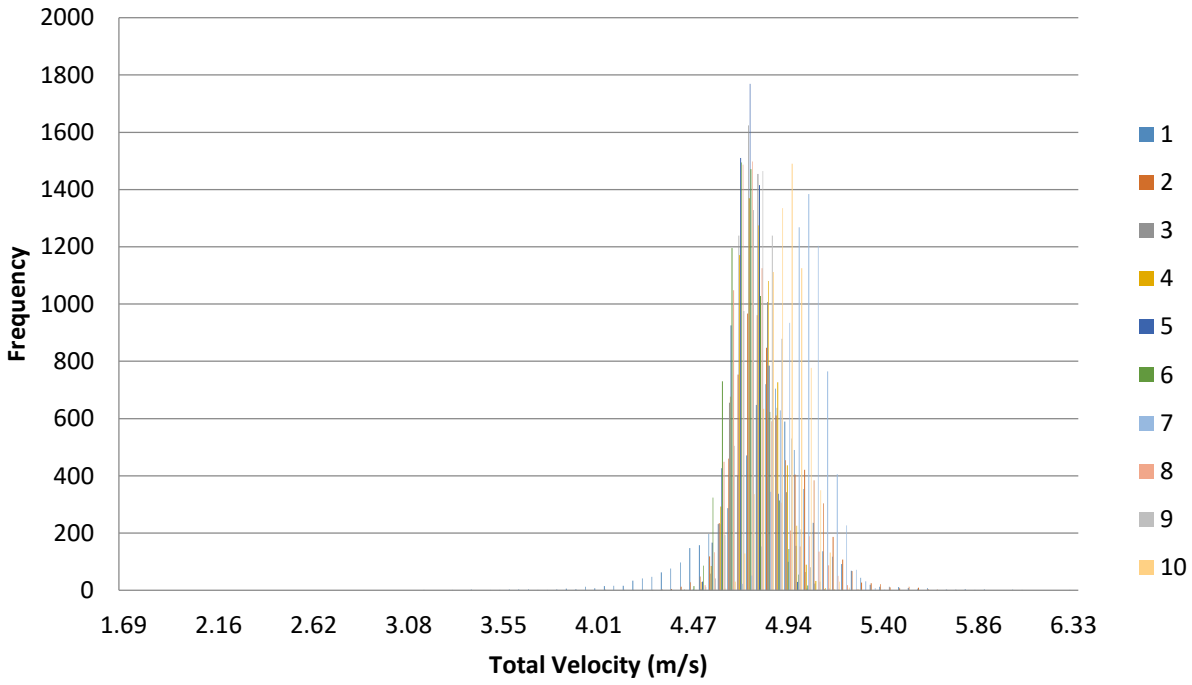


Figure 1. Velocity histogram for each interval (100 bins).

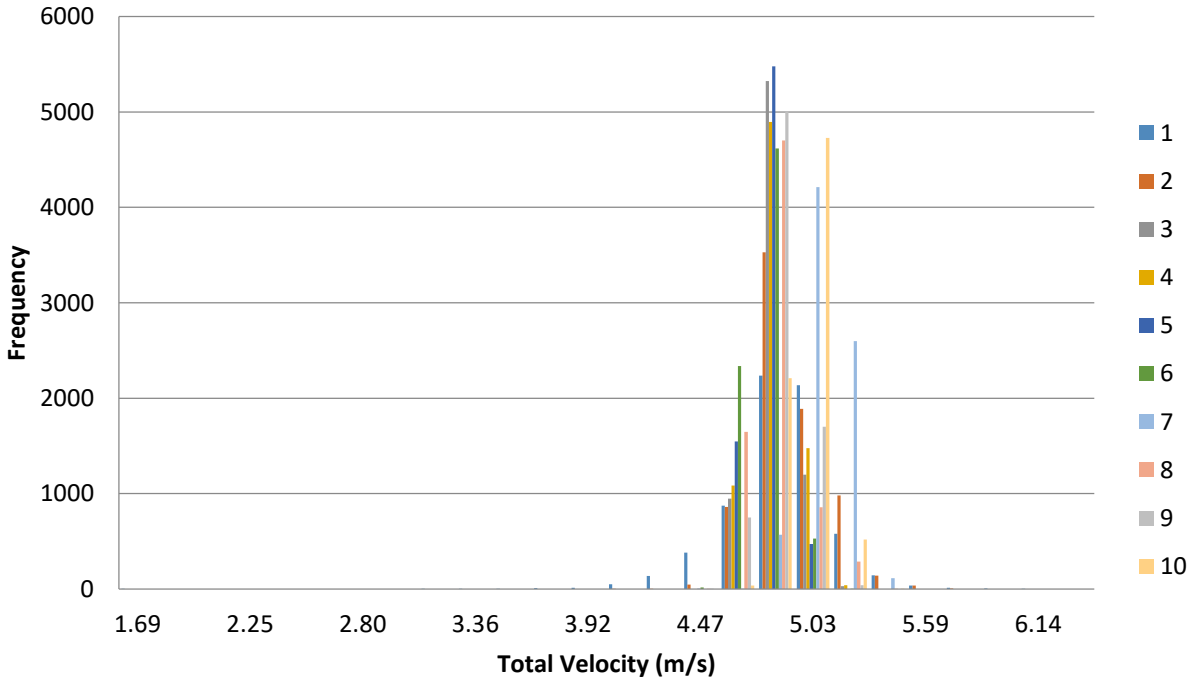
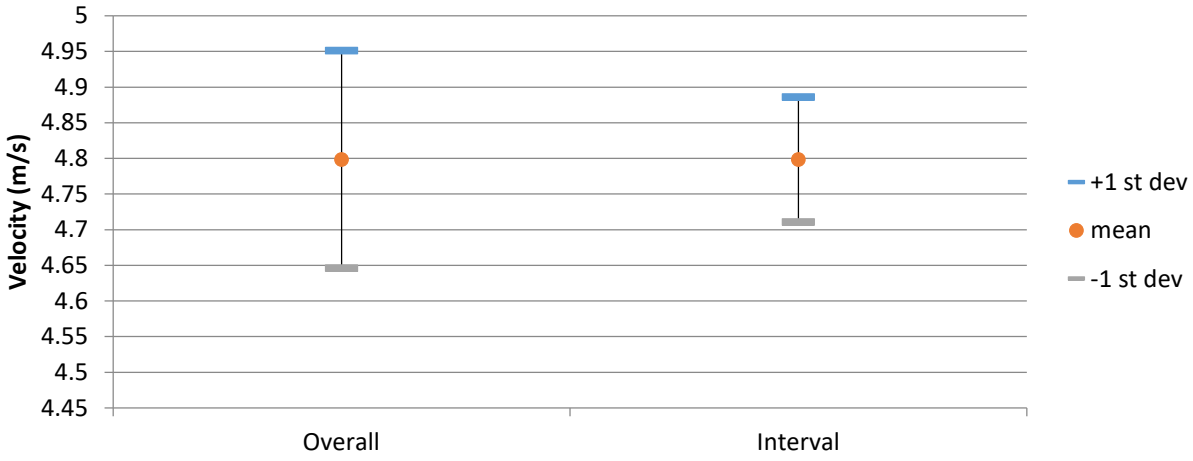
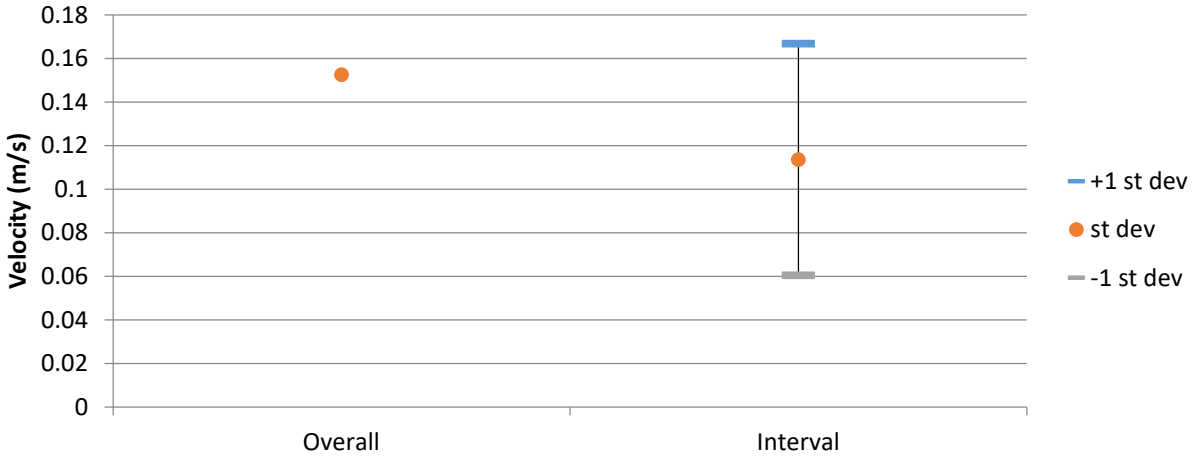


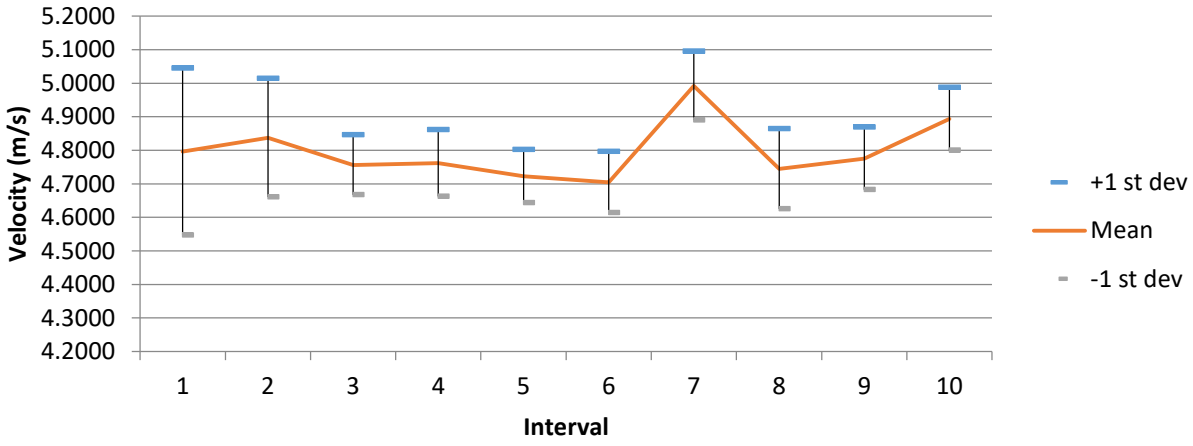
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 97
Blockage Condition: All Buildings
Blower Frequency: 25 Hz
Inlet Probe Location: A2
First Sample Date: 14-Aug-13
First Sample Time: 08:07:11.937

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.4271	3.2167	4.7816	0.2790
u	4.5100	2.2100	3.6686	0.3366
v	-1.4600	-3.6900	-2.8557	0.2130
w	0.7010	-2.1900	-1.0213	0.3539

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	5.2313	4.2619	4.8483	0.2155	4.4445	0	0.00 %
2	5.1392	4.1059	4.5976	0.1953	4.2483	1	0.01 %
3	5.1186	3.2167	4.3263	0.2014	4.6544	1015	8.12 %
4	5.2452	3.6644	4.8766	0.2536	5.2006	114	0.91 %
5	5.2388	4.5499	5.0095	0.0930	1.8574	0	0.00 %
6	5.2176	4.7966	5.0320	0.0519	1.0320	0	0.00 %
7	5.2603	4.3113	4.8314	0.2239	4.6336	0	0.00 %
8	5.2846	4.5168	4.9624	0.1253	2.5243	0	0.00 %
9	5.3945	3.9675	4.6365	0.2135	4.6047	0	0.00 %
10	5.4271	3.8149	4.6348	0.2051	4.4252	0	0.00 %
		Average	4.7755	0.1778	3.7625		
		St dev	0.2113	0.0616	1.3450		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	3.6998	-2.9207	-1.1242	0.1971	0.1488	0.0942	5.3263	4.0230	2.5468
2	3.4198	-2.8217	-1.1909	0.2396	0.1287	0.1649	7.0077	3.7631	4.8223
3	3.0295	-2.7814	-1.3035	0.2617	0.1337	0.2405	8.6385	4.4144	7.9399
4	3.7364	-2.9610	-0.9626	0.3190	0.1440	0.2623	8.5364	3.8532	7.0202
5	3.9471	-2.8712	-1.1187	0.1155	0.0778	0.0922	2.9264	1.9719	2.3353
6	3.9479	-2.9086	-1.1216	0.0751	0.0778	0.0925	1.9012	1.9712	2.3424
7	3.6709	-2.9016	-1.1865	0.2480	0.1182	0.1206	6.7548	3.2198	3.2841
8	3.8681	-2.9893	-0.8346	0.1003	0.0950	0.1651	2.5920	2.4563	4.2679
9	3.6677	-2.7683	-0.3376	0.2752	0.3176	0.3705	7.5040	8.6585	10.1006
10	3.6139	-2.6252	-1.0700	0.2741	0.3624	0.4696	7.5858	10.0289	12.9940

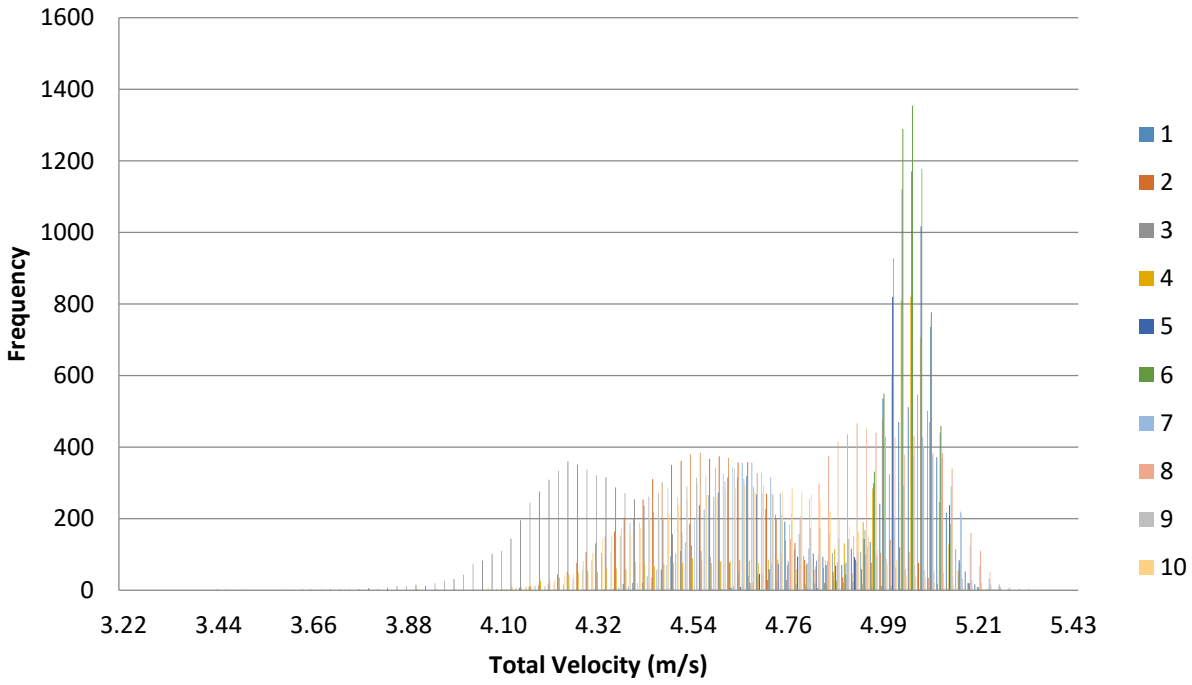


Figure 1. Velocity histogram for each interval (100 bins).

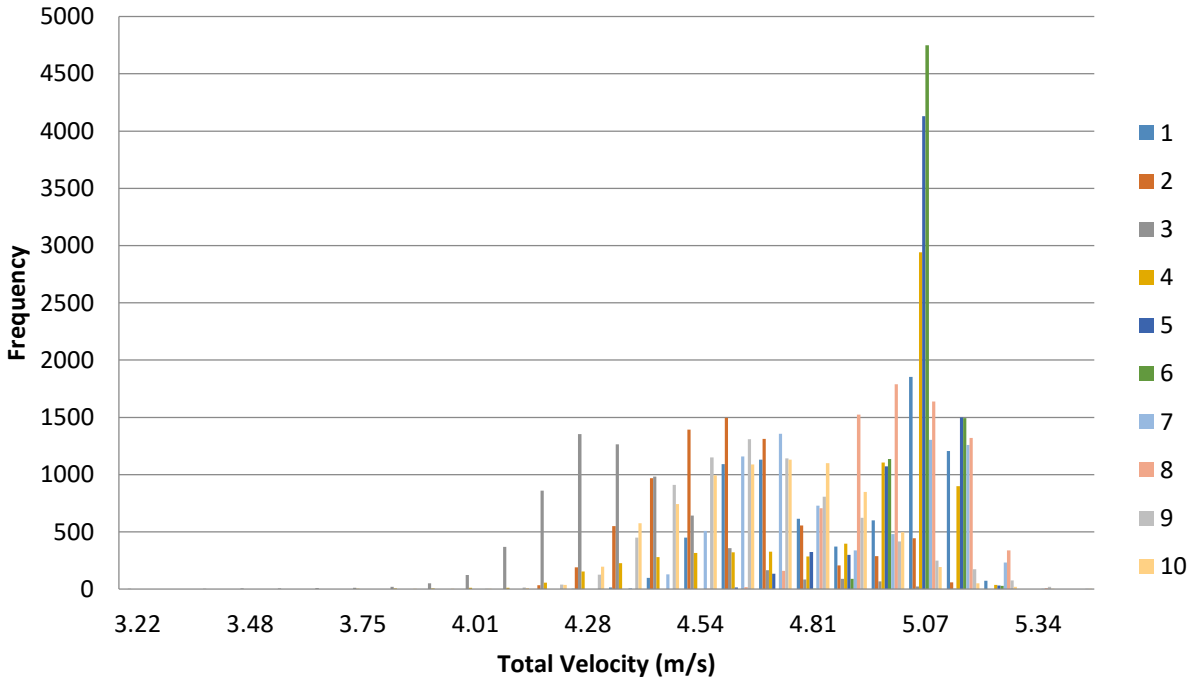
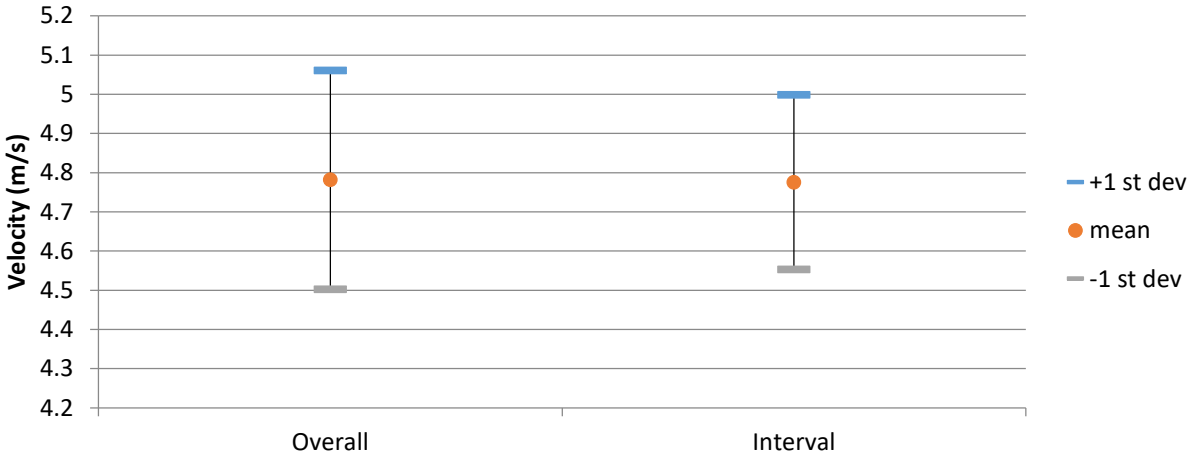
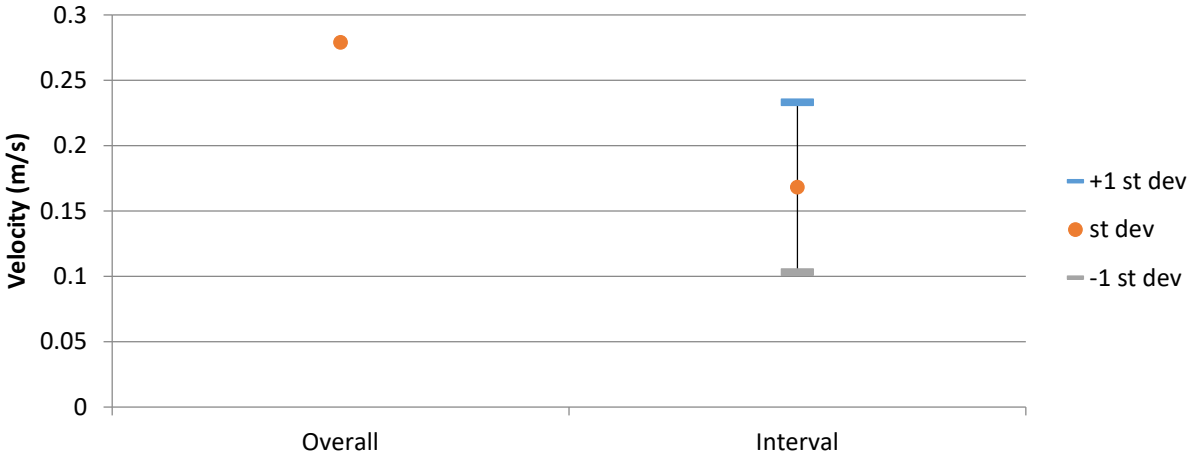


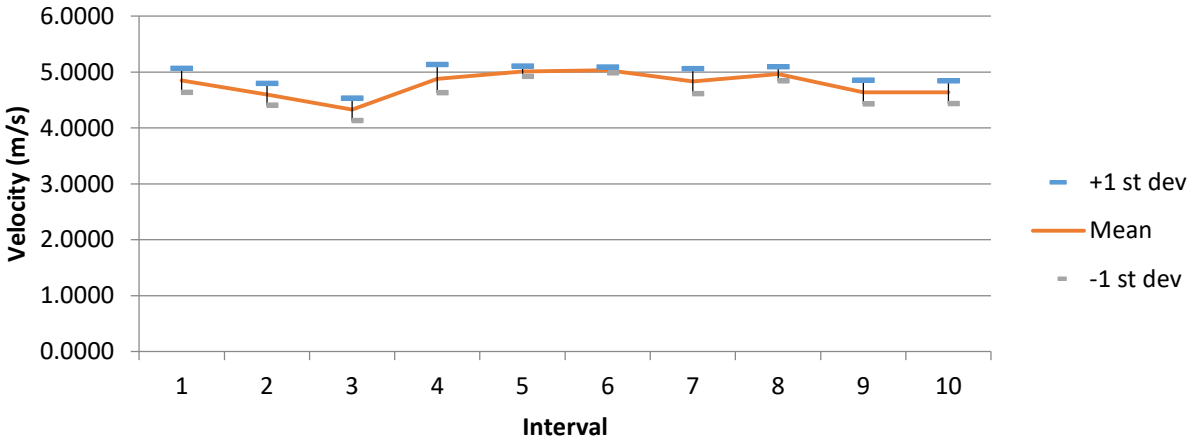
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 98
Blockage Condition: All buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: A3
First Sample Date: 14-Aug-13
First Sample Time: 08:08:37.140

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.5453	3.5219	4.4456	0.2391
u	4.8400	2.1600	3.3173	0.2748
v	-1.5900	-3.9800	-2.8987	0.2259
w	0.9450	-2.2500	-0.4278	0.3239

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	5.5223	3.5456	4.4743	0.3047	6.8107	3013	24.10 %
2	5.5453	3.5219	4.5406	0.2929	6.4510	2584	20.67 %
3	5.1914	3.5510	4.4111	0.2434	5.5173	4546	36.37 %
4	5.3558	3.8834	4.4278	0.2356	5.3201	1329	10.63 %
5	5.3549	4.0768	4.5295	0.2366	5.2231	40	0.32 %
6	5.2938	4.0524	4.4999	0.2269	5.0427	0	0.00 %
7	5.3040	3.9970	4.4934	0.2820	6.2751	4	0.03 %
8	4.9840	3.9639	4.3651	0.1577	3.6132	0	0.00 %
9	5.5450	3.9793	4.3879	0.1702	3.8790	0	0.00 %
10	5.0180	3.9747	4.3474	0.1545	3.5550	0	0.00 %
		Average	4.4477	0.2305	5.1687		
		St dev	0.0656	0.0520	1.1142		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	3.2015	-3.0032	-0.7571	0.3247	0.1964	0.3554	10.1429	6.1335	11.1020
2	3.3073	-3.0329	-0.5965	0.3415	0.1876	0.2433	10.3271	5.6722	7.3553
3	3.0388	-3.1331	-0.4871	0.2224	0.1248	0.4054	7.3174	4.1057	13.3403
4	3.2414	-2.9124	-0.2131	0.4063	0.3227	0.5974	12.5356	9.9558	18.4289
5	3.2618	-3.0968	-0.4563	0.2313	0.1073	0.2642	7.0923	3.2889	8.0992
6	3.3480	-2.9671	-0.4357	0.2035	0.1230	0.2028	6.0785	3.6751	6.0566
7	3.3488	-2.9450	-0.4598	0.3009	0.1416	0.2475	8.9844	4.2282	7.3908
8	3.3763	-2.7383	-0.3674	0.1326	0.0986	0.1380	3.9261	2.9211	4.0870
9	3.4428	-2.6801	-0.3112	0.2308	0.1807	0.2535	6.7029	5.2483	7.3628
10	3.3734	-2.7117	-0.3818	0.1330	0.1037	0.1275	3.9422	3.0739	3.7810

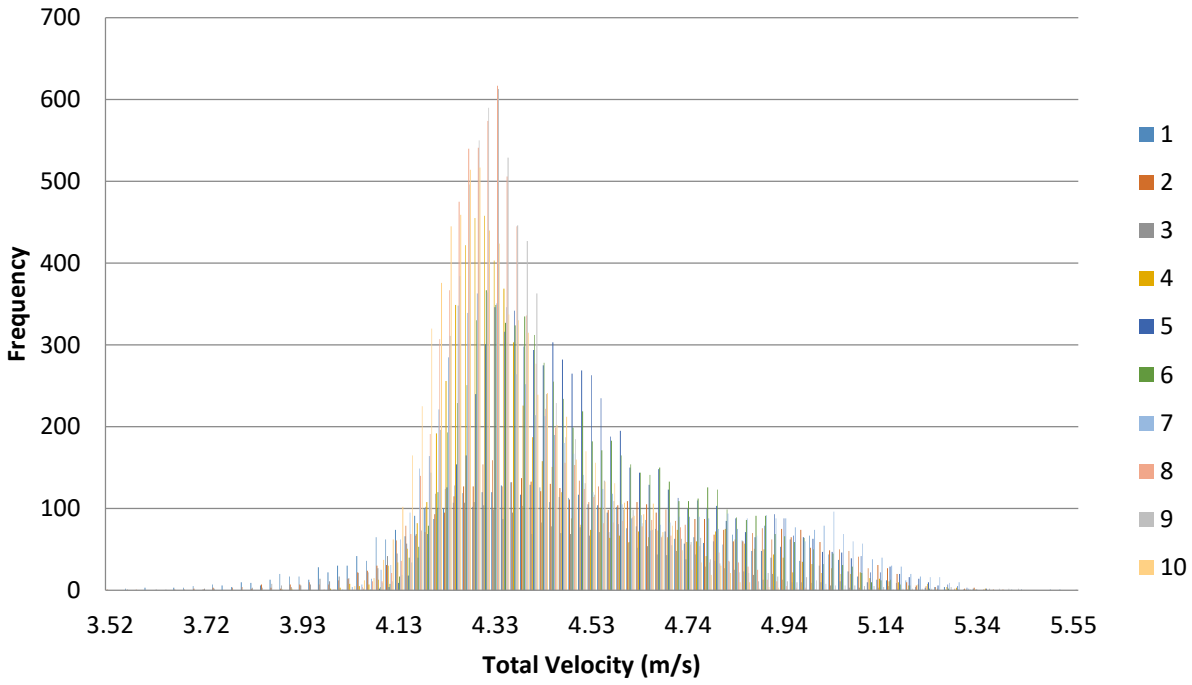


Figure 1. Velocity histogram for each interval (100 bins).

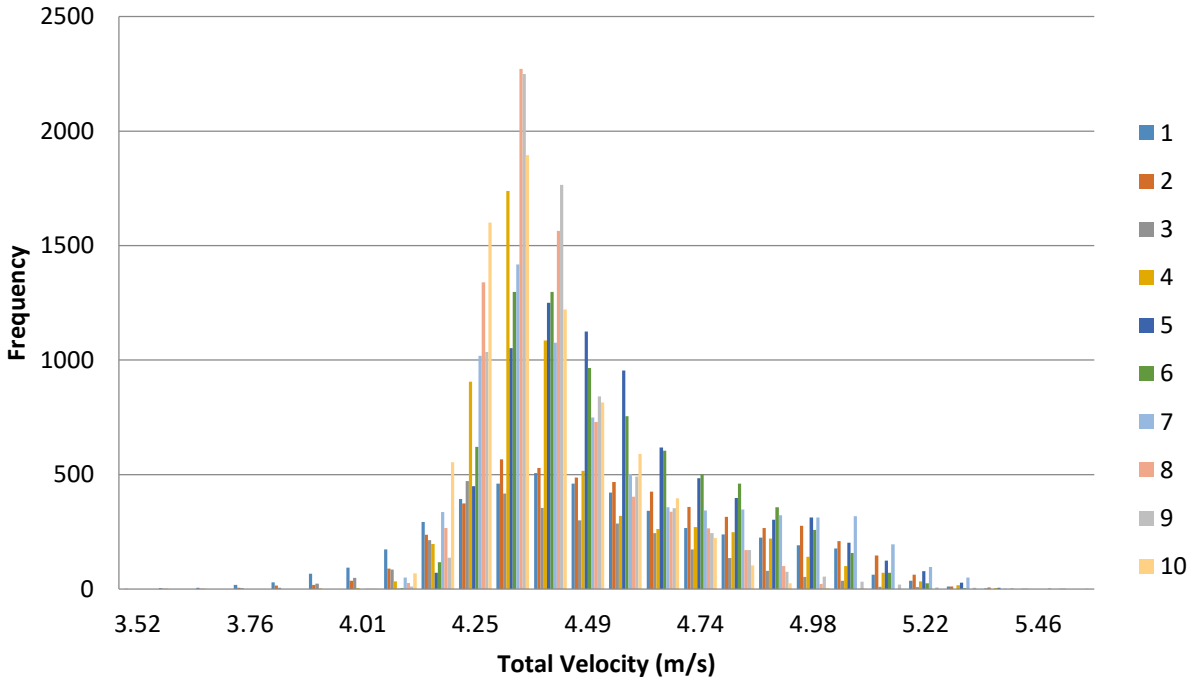
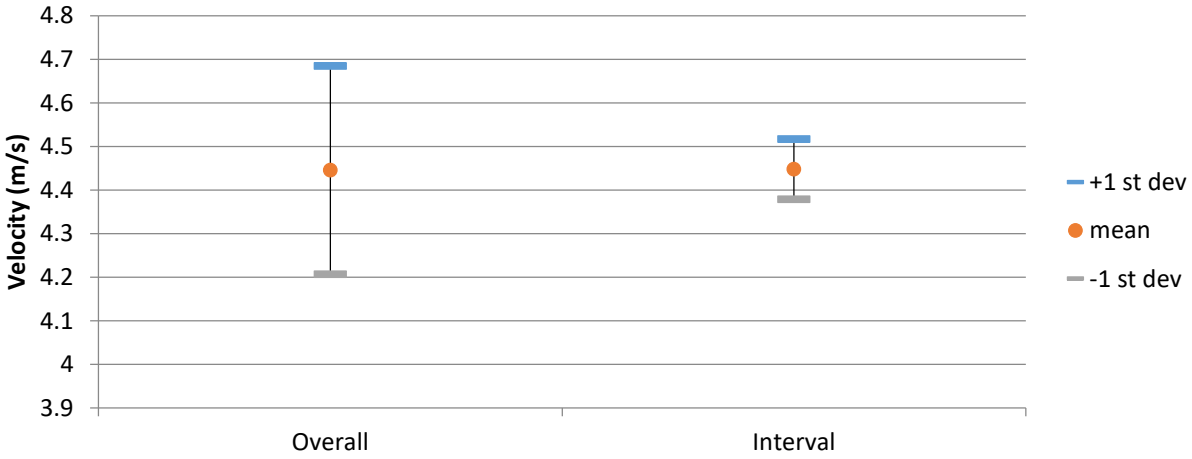
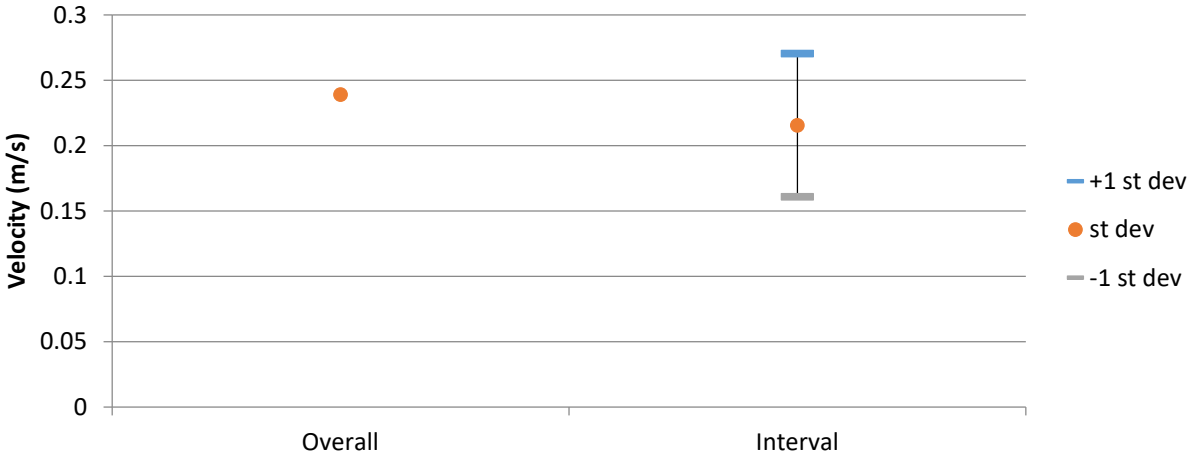


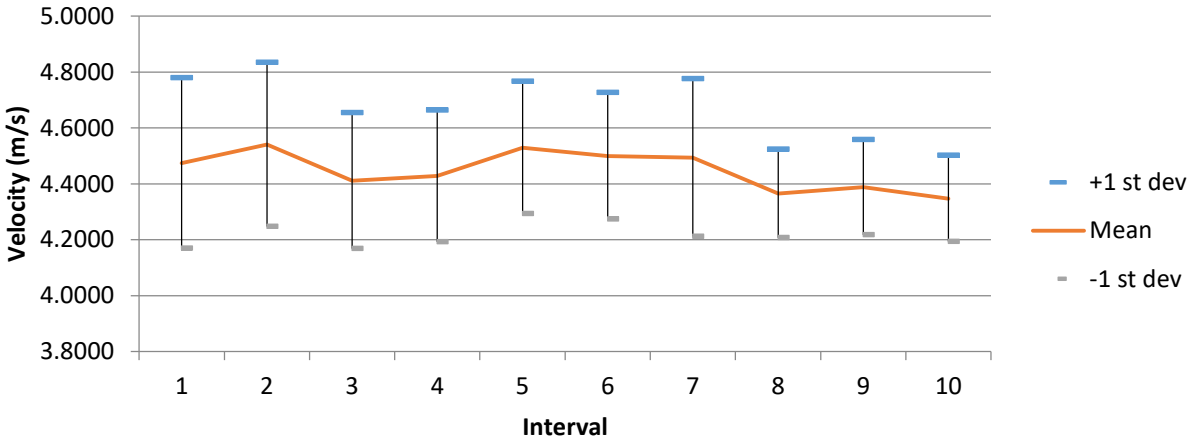
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 99
Blockage Condition: All Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: A4
First Sample Date: 14-Aug-13
First Sample Time: 08:12:02.625

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	4.8738	3.6941	4.1206	0.1147
u	3.6900	2.6000	3.0944	0.1493
v	-2.4400	-3.3100	-2.7085	0.1022
w	0.1720	-0.9850	-0.1878	0.1176

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	4.5196	3.9412	4.1737	0.0753	1.8036	0	0.00 %
2	4.4998	3.9341	4.1569	0.0735	1.7685	0	0.00 %
3	4.5049	3.9304	4.1690	0.0764	1.8326	0	0.00 %
4	4.8738	3.8892	4.1996	0.1067	2.5397	8	0.06 %
5	4.5430	3.7976	4.1363	0.1159	2.8016	1	0.01 %
6	4.4690	3.7643	4.0544	0.1024	2.5266	2	0.02 %
7	4.4745	3.7514	4.0454	0.0806	1.9936	5	0.04 %
8	4.8541	3.8278	4.1200	0.1346	3.2666	0	0.00 %
9	4.5998	3.7656	4.1084	0.1185	2.8847	0	0.00 %
10	4.4350	3.6941	4.0427	0.1078	2.6656	0	0.00 %
		Average	4.1206	0.0992	2.4083		
		St dev	0.0540	0.0203	0.4994		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	3.1109	-2.7706	-0.2179	0.1230	0.0669	0.0683	3.9552	2.1505	2.1965
2	3.0856	-2.7756	-0.1956	0.1222	0.0604	0.0564	3.9614	1.9585	1.8290
3	3.1122	-2.7619	-0.2158	0.1259	0.0710	0.0682	4.0457	2.2827	2.1913
4	3.1400	-2.7674	-0.2577	0.1601	0.1375	0.1360	5.0976	4.3782	4.3303
5	3.1477	-2.6785	-0.0337	0.1657	0.0801	0.0702	5.2645	2.5450	2.2298
6	3.0675	-2.6438	-0.1334	0.1558	0.0546	0.0689	5.0784	1.7810	2.2455
7	2.9954	-2.7091	-0.1663	0.1354	0.0759	0.0918	4.5216	2.5333	3.0662
8	3.0844	-2.7127	-0.2633	0.1513	0.0844	0.1467	4.9046	2.7361	4.7557
9	3.0854	-2.6963	-0.2463	0.1383	0.0922	0.1244	4.4835	2.9885	4.0303
10	3.1148	-2.5687	-0.1482	0.1507	0.0472	0.0884	4.8385	1.5144	2.8378

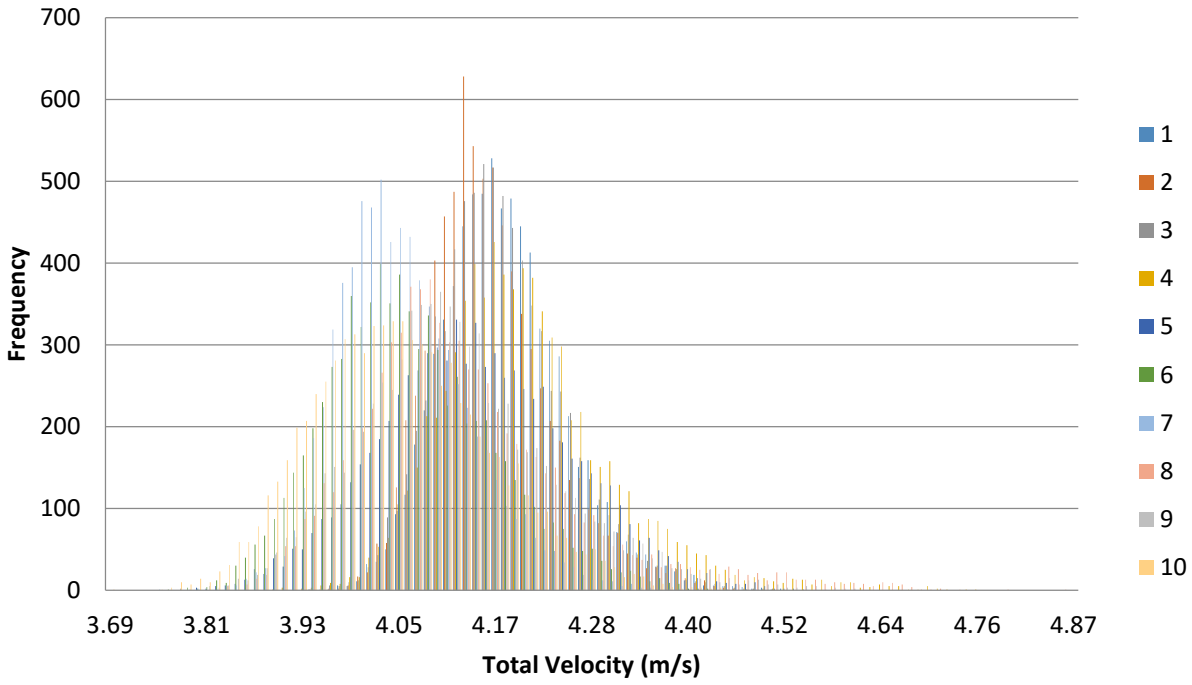


Figure 1. Velocity histogram for each interval (100 bins).

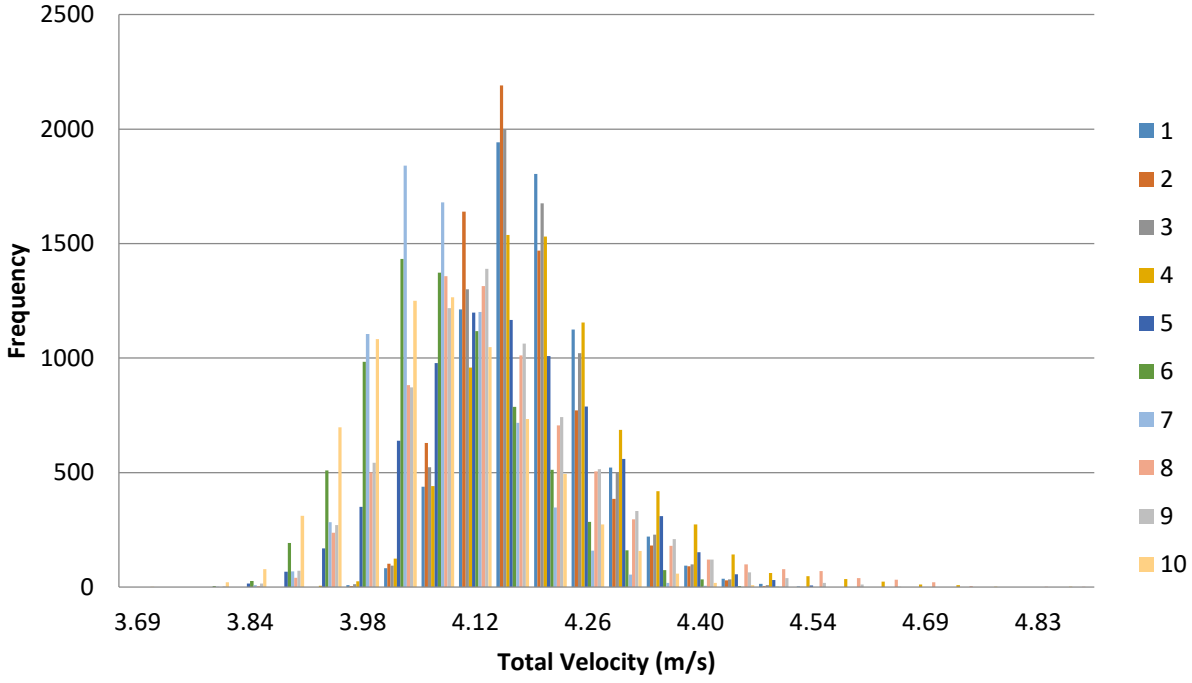
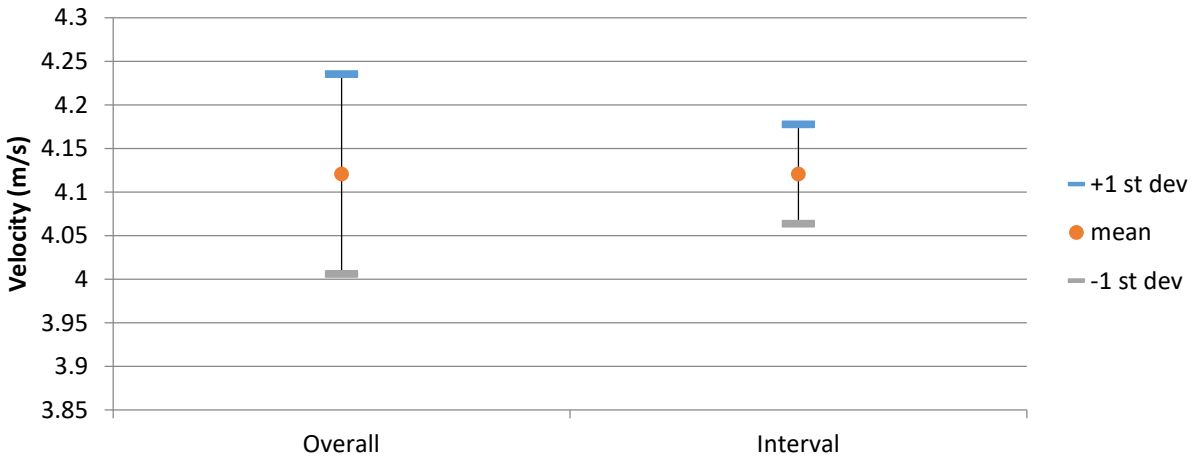
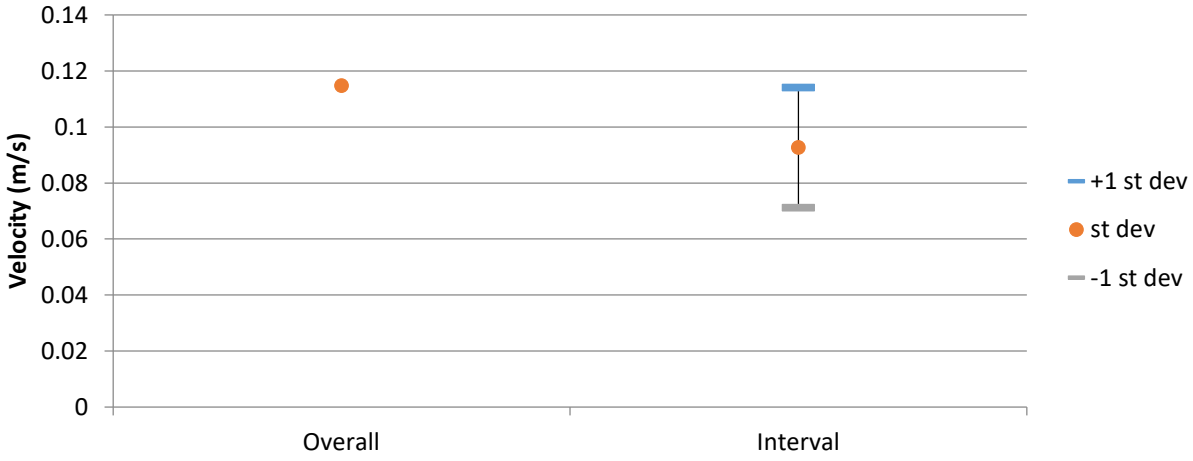


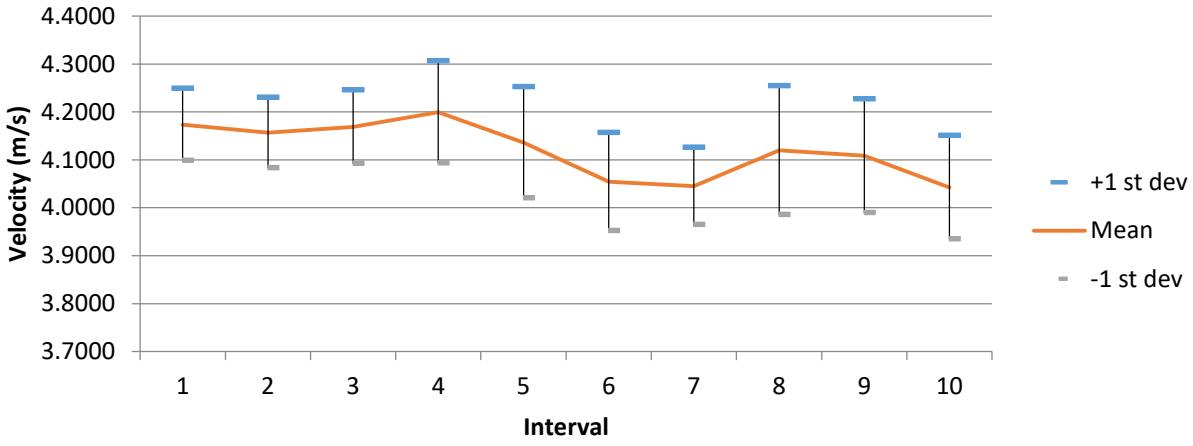
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 100
Blockage Condition: All Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: A5
First Sample Date: 14-Aug-13
First Sample Time: 08:13:38.937

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	4.4468	3.7483	4.0339	0.0853
u	3.6000	2.5900	2.9910	0.1328
v	-2.4300	-3.0200	-2.7007	0.0643
w	0.4690	-0.4050	0.1010	0.0862

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	4.4468	3.8468	4.0991	0.0905	2.2088	0	0.00 %
2	4.3869	3.8480	4.0519	0.0705	1.7395	0	0.00 %
3	4.3346	3.8049	4.0400	0.0736	1.8207	1	0.01 %
4	4.3353	3.7626	4.0010	0.0765	1.9108	0	0.00 %
5	4.2823	3.7627	3.9990	0.0806	2.0163	0	0.00 %
6	4.3099	3.7629	4.0098	0.0807	2.0134	0	0.00 %
7	4.2980	3.7774	4.0114	0.0794	1.9802	2	0.02 %
8	4.3432	3.7880	4.0477	0.0787	1.9444	0	0.00 %
9	4.4038	3.7921	4.0645	0.0842	2.0725	0	0.00 %
10	4.3082	3.7483	4.0142	0.0783	1.9508	0	0.00 %
		Average	4.0339	0.0793	1.9657		
		St dev	0.0308	0.0052	0.1231		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	3.0912	-2.6855	0.0174	0.1596	0.0858	0.1021	5.1629	2.7744	3.3022
2	2.9517	-2.7728	0.0666	0.1047	0.0382	0.0681	3.5481	1.2929	2.3078
3	2.9543	-2.7510	0.1018	0.1204	0.0555	0.0588	4.0738	1.8803	1.9905
4	2.9480	-2.7006	0.0526	0.1251	0.0523	0.0928	4.2438	1.7753	3.1465
5	2.9785	-2.6625	0.1286	0.1236	0.0533	0.0568	4.1510	1.7898	1.9079
6	2.9933	-2.6641	0.0927	0.1233	0.0521	0.0411	4.1201	1.7406	1.3729
7	2.9492	-2.7139	0.1212	0.1172	0.0358	0.0705	3.9727	1.2124	2.3919
8	3.0035	-2.7077	0.1407	0.1163	0.0382	0.0553	3.8711	1.2705	1.8425
9	3.0684	-2.6567	0.1544	0.1212	0.0566	0.1107	3.9493	1.8430	3.6092
10	2.9718	-2.6925	0.1345	0.1185	0.0474	0.0680	3.9861	1.5956	2.2868

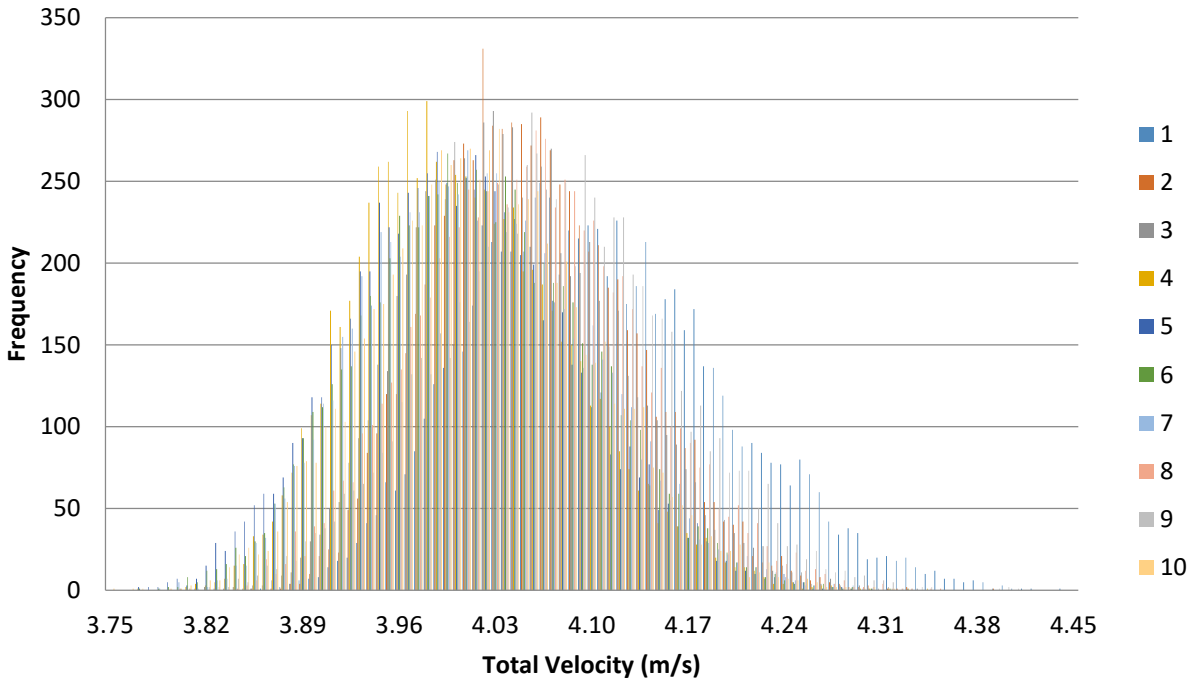


Figure 1. Velocity histogram for each interval (100 bins).

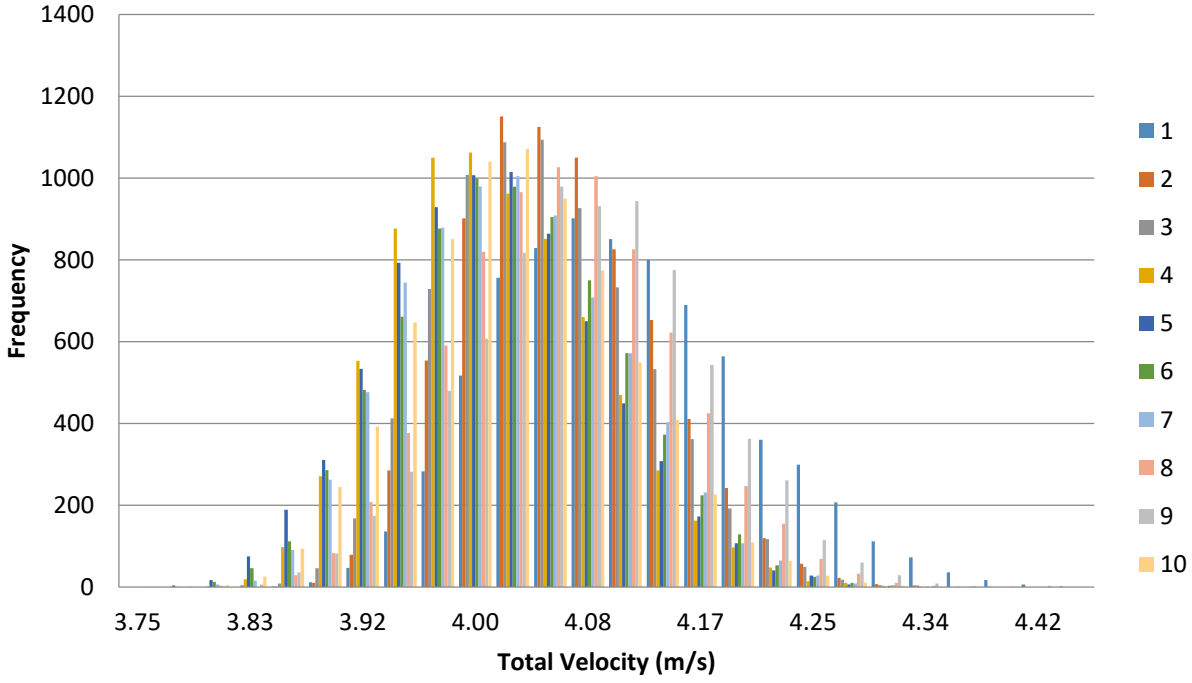
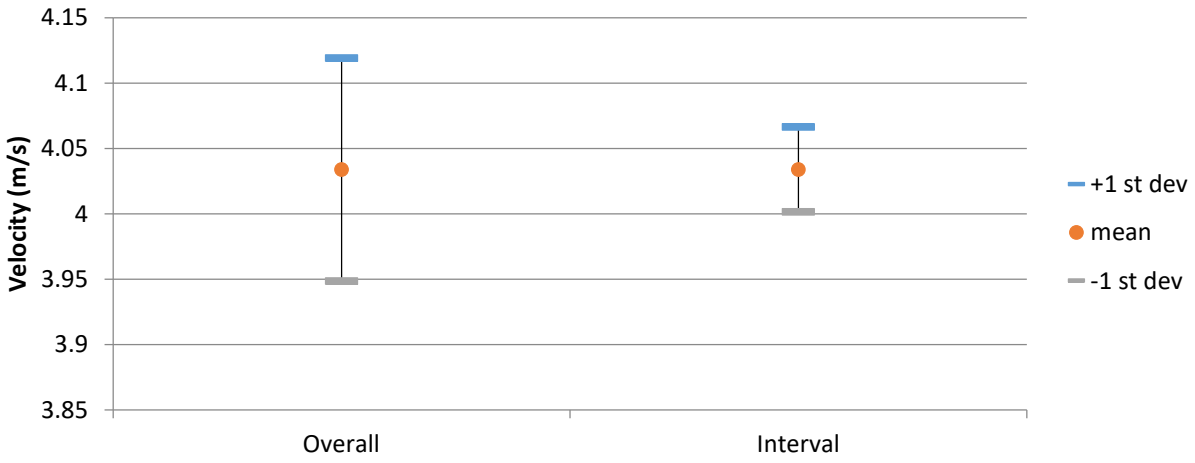
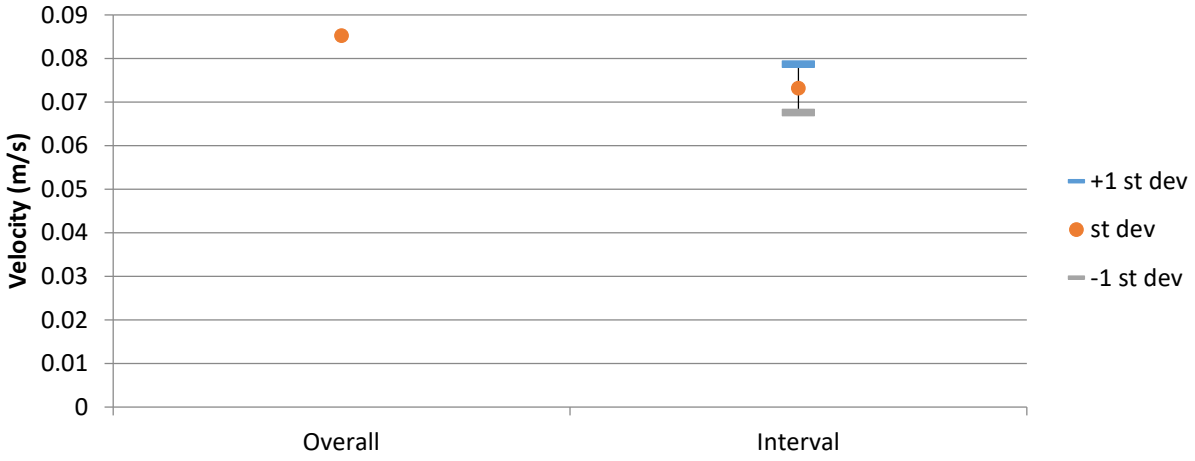


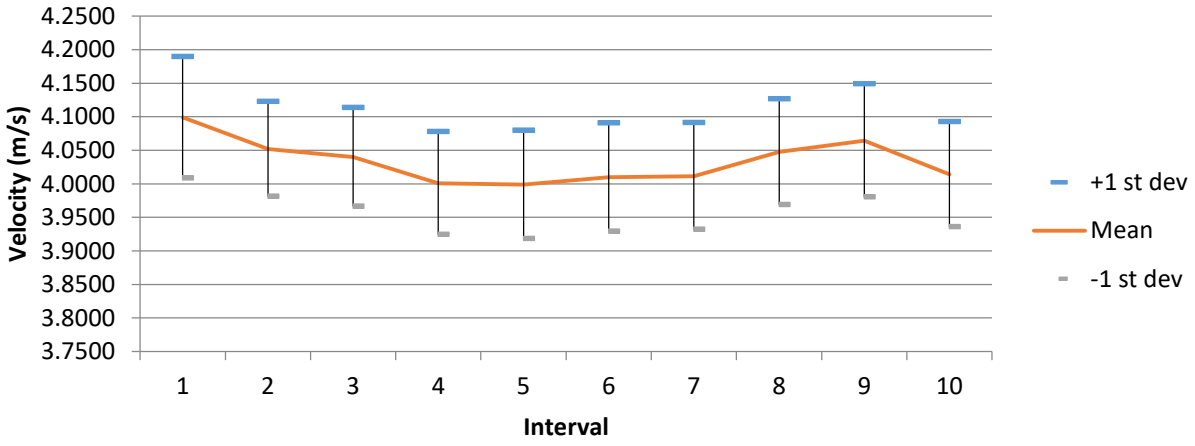
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 101
Blockage Condition: All Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: G5
First Sample Date: 14-Aug-13
First Sample Time: 08:15:49.718

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.2021	4.6372	4.9181	0.0679
u	5.0800	4.2700	4.7094	0.0973
v	1.8900	0.8840	1.3692	0.1336
w	0.0701	-0.6820	-0.3138	0.1166

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.1643	4.7078	4.9302	0.0633	1.3402
2	5.1844	4.6890	4.9329	0.0661	1.5063
3	5.1786	4.6401	4.9079	0.0739	1.4356
4	5.1732	4.6865	4.9275	0.0707	1.2947
5	5.1645	4.6694	4.9018	0.0635	1.3164
6	5.1507	4.6515	4.8984	0.0645	1.3057
7	5.1477	4.6672	4.8916	0.0639	1.2216
8	5.1822	4.7065	4.9383	0.0603	1.2355
9	5.2021	4.7038	4.9467	0.0611	1.3434
10	5.1693	4.6372	4.9061	0.0659	1.3282
		Average	4.9181	0.0653	1.3328
		St Dev	0.0191	0.0042	0.0807

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	4.7125	1.4239	-0.2192	0.0927	0.1129	0.0785	1.9669	2.3957	1.6651
2	4.7391	1.3115	-0.3567	0.0879	0.1219	0.0960	1.8548	2.5717	2.0250
3	4.7438	1.2294	-0.2360	0.0968	0.0995	0.0549	2.0396	2.0971	1.1567
4	4.7611	1.2413	-0.2406	0.0917	0.0878	0.0540	1.9268	1.8434	1.1337
5	4.6805	1.4239	-0.2779	0.0901	0.0969	0.0513	1.9258	2.0709	1.0962
6	4.6617	1.4612	-0.3315	0.0922	0.0943	0.0661	1.9783	2.0232	1.4173
7	4.6517	1.4919	-0.1953	0.0937	0.1002	0.1006	2.0151	2.1544	2.1635
8	4.7027	1.4474	-0.3900	0.0876	0.1098	0.0890	1.8619	2.3354	1.8932
9	4.7403	1.3294	-0.4630	0.0829	0.0792	0.0872	1.7495	1.6699	1.8392
10	4.7006	1.3323	-0.4284	0.0914	0.0941	0.0538	1.9436	2.0025	1.1454

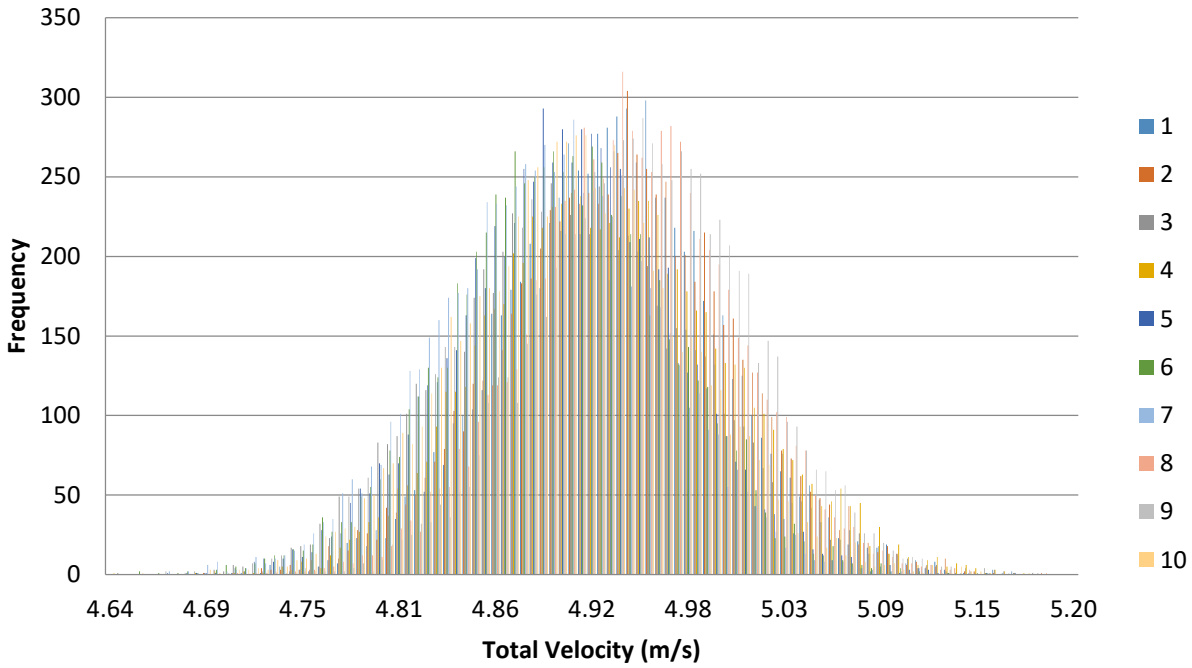


Figure 1. Velocity histogram for each interval (100 bins).

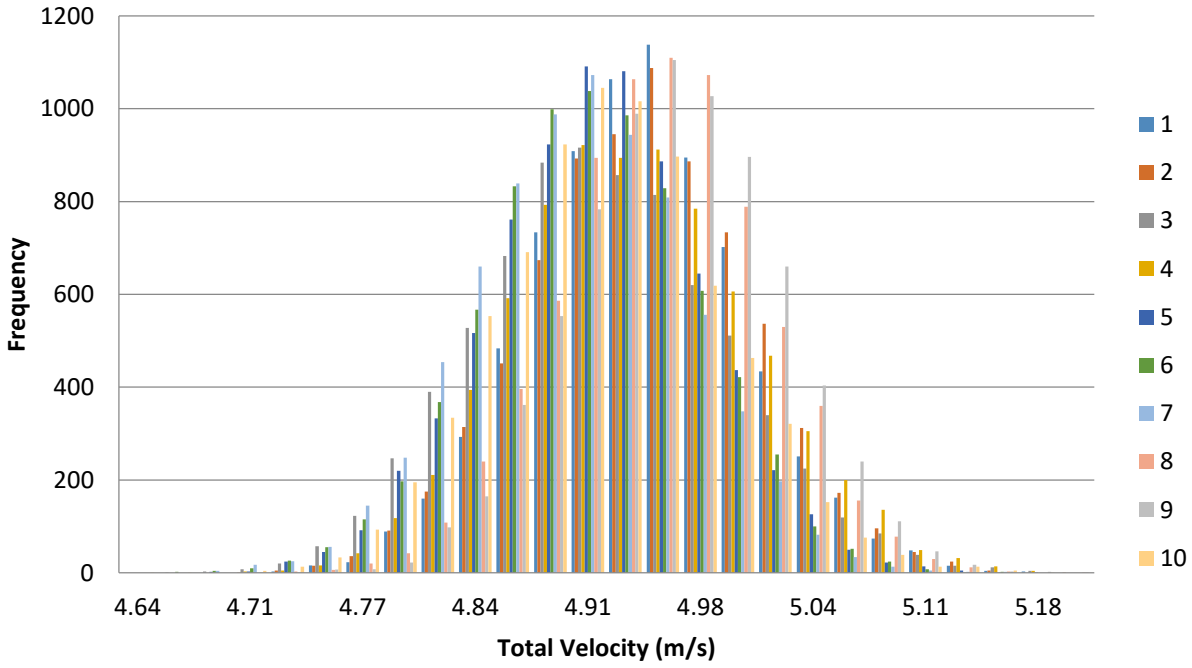
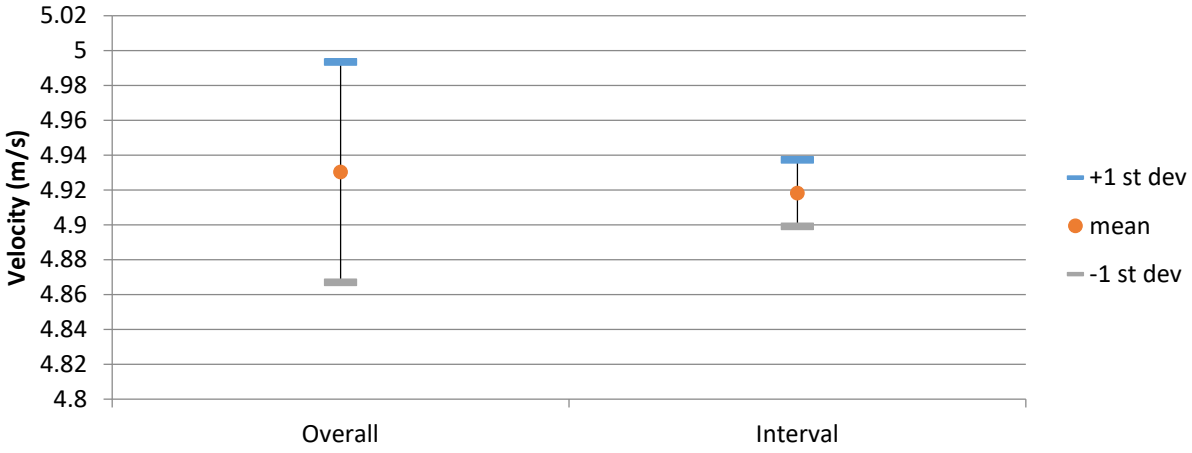
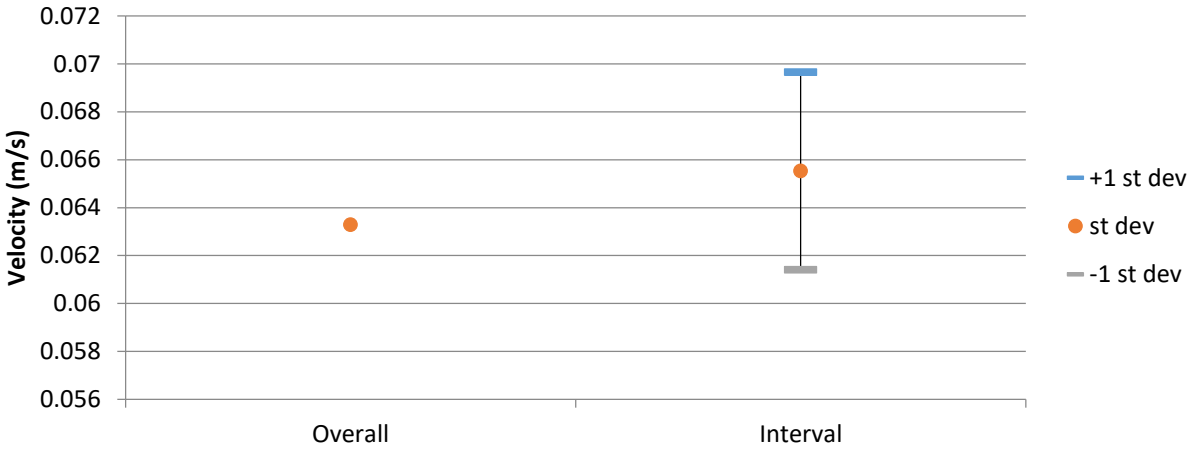


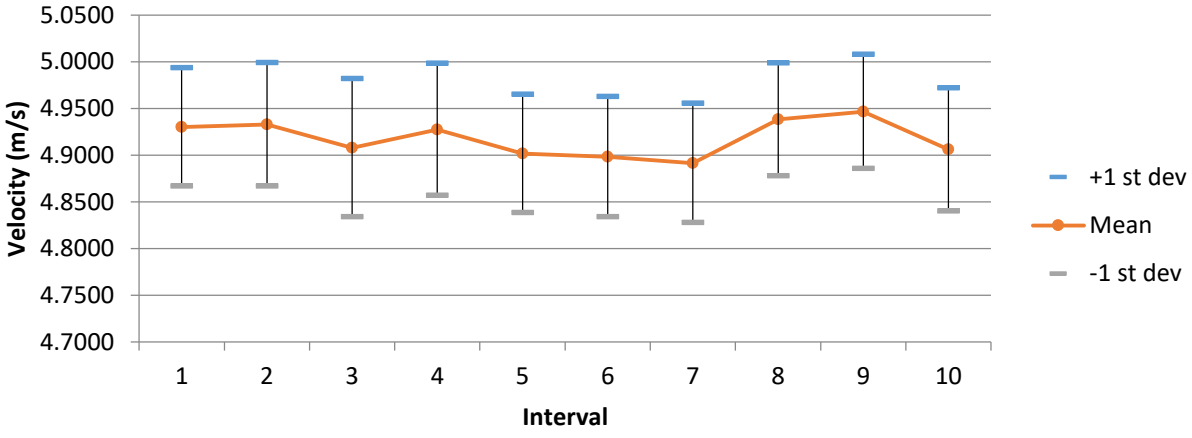
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 102
Blockage Condition: All Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: G4
First Sample Date: 14-Aug-13
First Sample Time: 08:17:28.390

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	6.2978	4.5379	5.0826	0.1767
u	5.5400	3.9400	4.7648	0.1921
v	3.7900	0.6960	1.6300	0.3212
w	0.6050	-1.9800	-0.4426	0.4093

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.4409	4.5751	4.9707	0.1232	2.1814
2	5.4091	4.6957	5.0130	0.1094	3.7893
3	6.2978	4.8686	5.3428	0.2025	2.3134
4	5.5966	4.7653	5.1083	0.1182	2.8513
5	5.7104	4.6160	5.1477	0.1468	2.3823
6	5.5768	4.6654	5.1018	0.1215	2.6435
7	5.6047	4.5829	5.1312	0.1356	2.4123
8	5.5683	4.6693	5.1045	0.1231	2.5421
9	5.4052	4.5970	4.9446	0.1257	2.6812
10	5.4249	4.5379	4.9614	0.1330	2.6345
		Average	5.0826	0.1339	2.6431
		St Dev	0.1187	0.0262	0.4257

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	4.7031	1.5693	-0.2639	0.1825	0.1696	0.1003	3.8811	3.6068	2.1337
2	4.6999	1.6619	-0.4711	0.1723	0.1751	0.0967	3.6666	3.7251	2.0570
3	4.7168	2.1560	-1.1743	0.1296	0.4166	0.3474	2.7475	8.8320	7.3661
4	4.7620	1.6837	-0.6959	0.1775	0.2404	0.1538	3.7282	5.0489	3.2307
5	4.8676	1.5167	-0.4095	0.1825	0.3574	0.4441	3.7487	7.3421	9.1234
6	4.7892	1.6016	-0.5455	0.1789	0.2082	0.4103	3.7350	4.3468	8.5678
7	4.8780	1.4721	-0.4049	0.2009	0.3157	0.2861	4.1182	6.4711	5.8651
8	4.8335	1.6049	0.1257	0.1791	0.2460	0.1558	3.7058	5.0897	3.2240
9	4.6931	1.5148	-0.2698	0.1862	0.1724	0.0908	3.9675	3.6737	1.9343
10	4.7052	1.5191	-0.3167	0.1935	0.1770	0.1332	4.1121	3.7618	2.8307

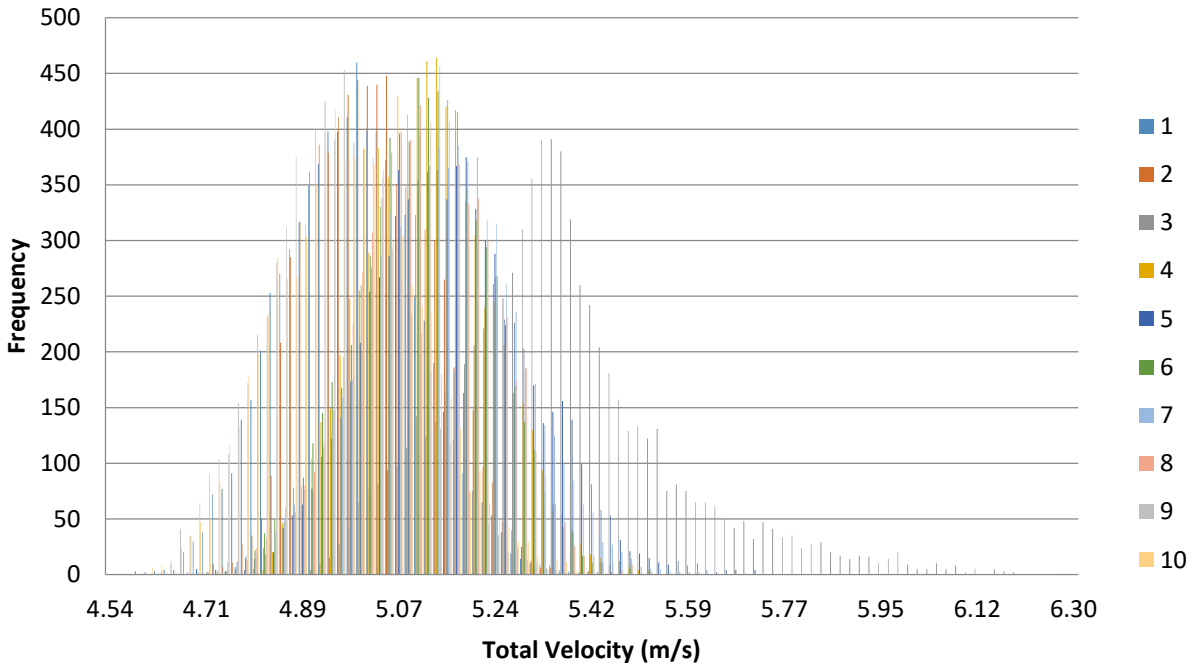


Figure 1. Velocity histogram for each interval (100 bins).

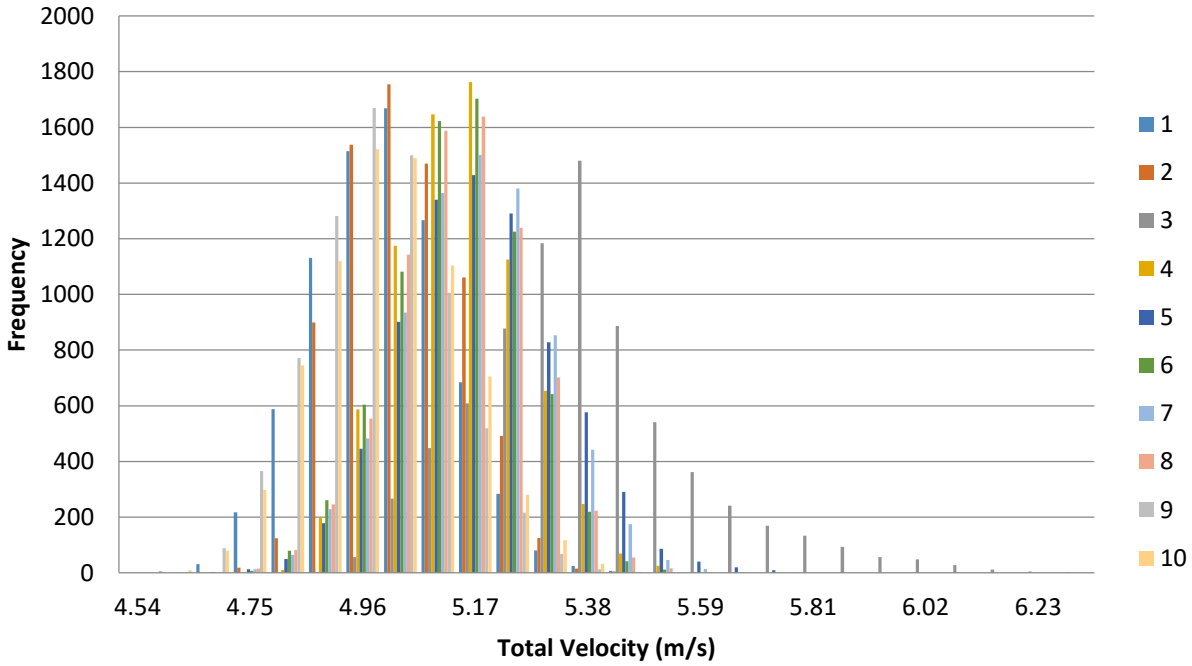
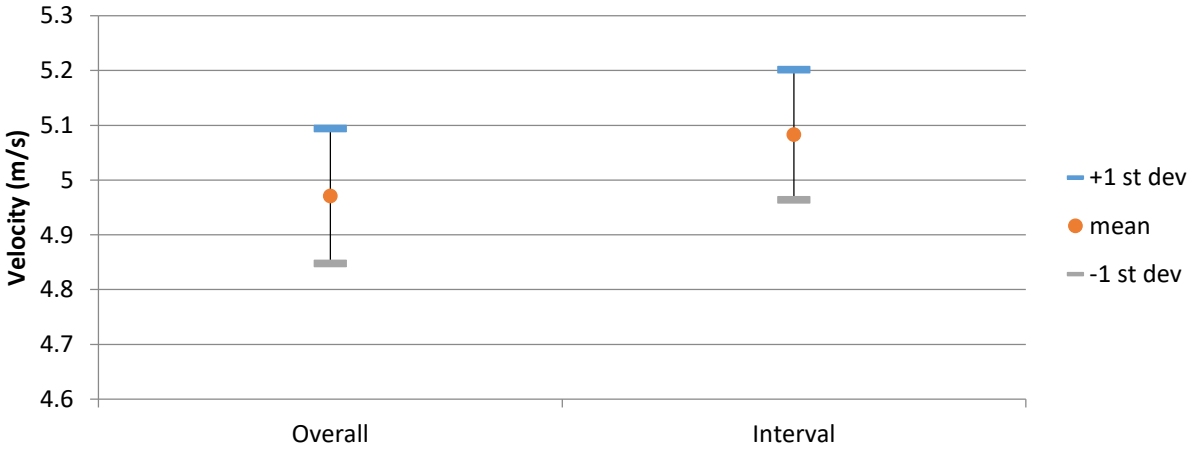
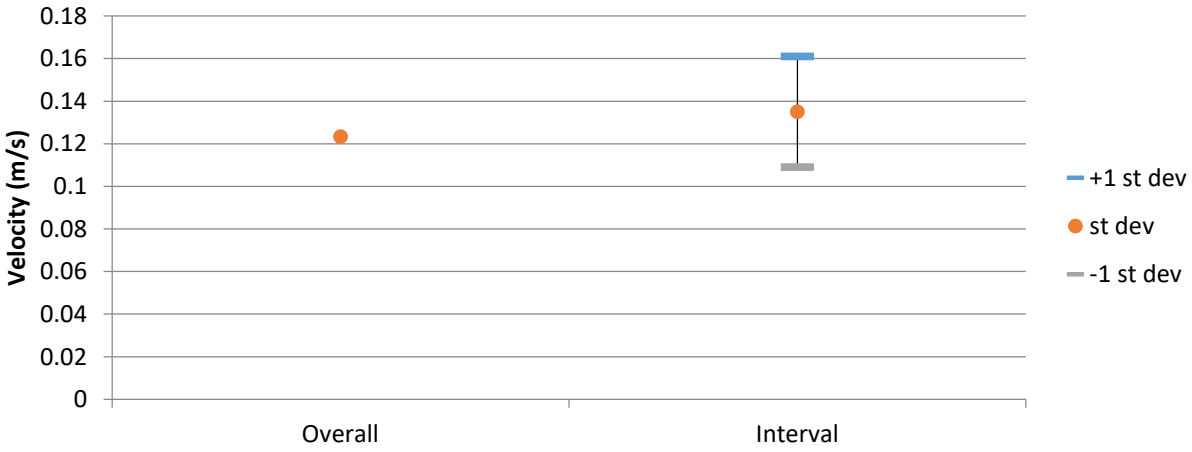


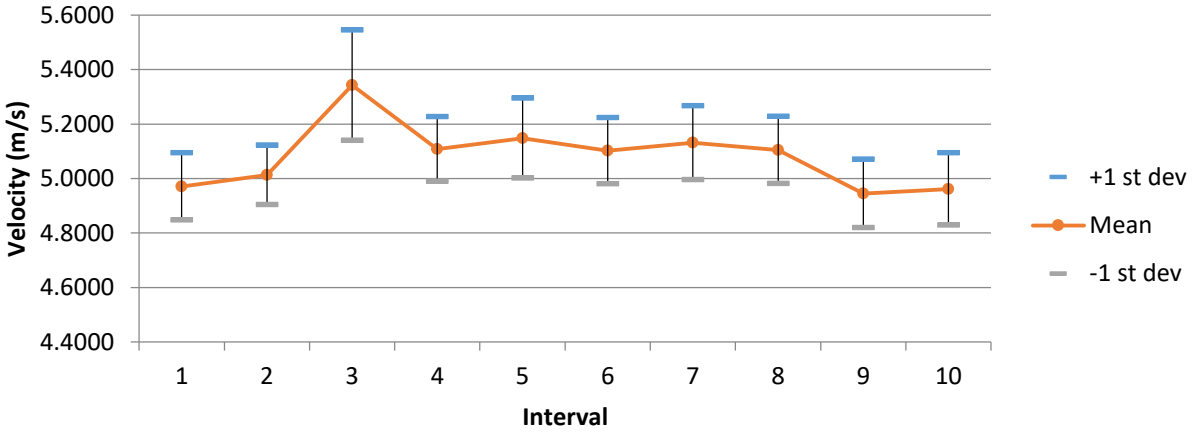
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 103
Blockage Condition: All Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: G2
First Sample Date: 14-Aug-13
First Sample Time: 08:19:26.250

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	7.2636	5.2442	5.7590	0.2711
u	5.6200	4.2100	4.7429	0.1937
v	4.8100	0.9210	2.4257	0.5664
w	-1.0900	-3.4800	-2.0895	0.3688

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	6.9020	5.3859	5.9104	0.2209	3.7372	0	0.00 %
2	6.5729	5.3894	5.7728	0.1641	2.8430	0	0.00 %
3	6.6628	5.2973	5.7735	0.1918	3.3214	0	0.00 %
4	6.4615	5.2772	5.5638	0.1347	2.4206	0	0.00 %
5	5.9925	5.2942	5.5212	0.0944	1.7105	0	0.00 %
6	6.5970	5.3175	5.6001	0.1724	3.0776	0	0.00 %
7	6.9093	5.3608	5.8452	0.2379	4.0699	0	0.00 %
8	7.2163	5.2871	5.8791	0.3230	5.4948	0	0.00 %
9	7.2636	5.3929	6.0996	0.2914	4.7773	2	0.02 %
10	6.4692	5.2442	5.6239	0.1433	2.5477	0	0.00 %
		Average	5.7590	0.1974	3.4000		
		St dev	0.1730	0.0679	1.0866		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	4.8068	2.9053	-1.8017	0.1452	0.3677	0.1809	3.0204	7.6502	3.7642
2	4.9113	2.5027	-1.6833	0.0955	0.3343	0.1148	1.9444	6.8072	2.3376
3	4.8331	2.5420	-1.8257	0.1695	0.3434	0.2648	3.5071	7.1052	5.4784
4	4.7048	2.1317	-2.0388	0.0998	0.3143	0.1729	2.1221	6.6803	3.6742
5	4.8016	1.9116	-1.9192	0.1198	0.2544	0.1440	2.4942	5.2991	3.0000
6	4.6593	2.1527	-2.1984	0.1186	0.3975	0.2063	2.5444	8.5305	4.4284
7	4.6196	2.7096	-2.3099	0.0797	0.4134	0.1665	1.7243	8.9494	3.6041
8	4.5050	2.6227	-2.6734	0.0952	0.5430	0.2086	2.1131	12.0530	4.6311
9	4.7026	3.0266	-2.3683	0.1605	0.5319	0.3118	3.4127	11.3107	6.6305
10	4.8848	1.7520	-2.0759	0.3009	0.4051	0.3929	6.1600	8.2926	8.0439

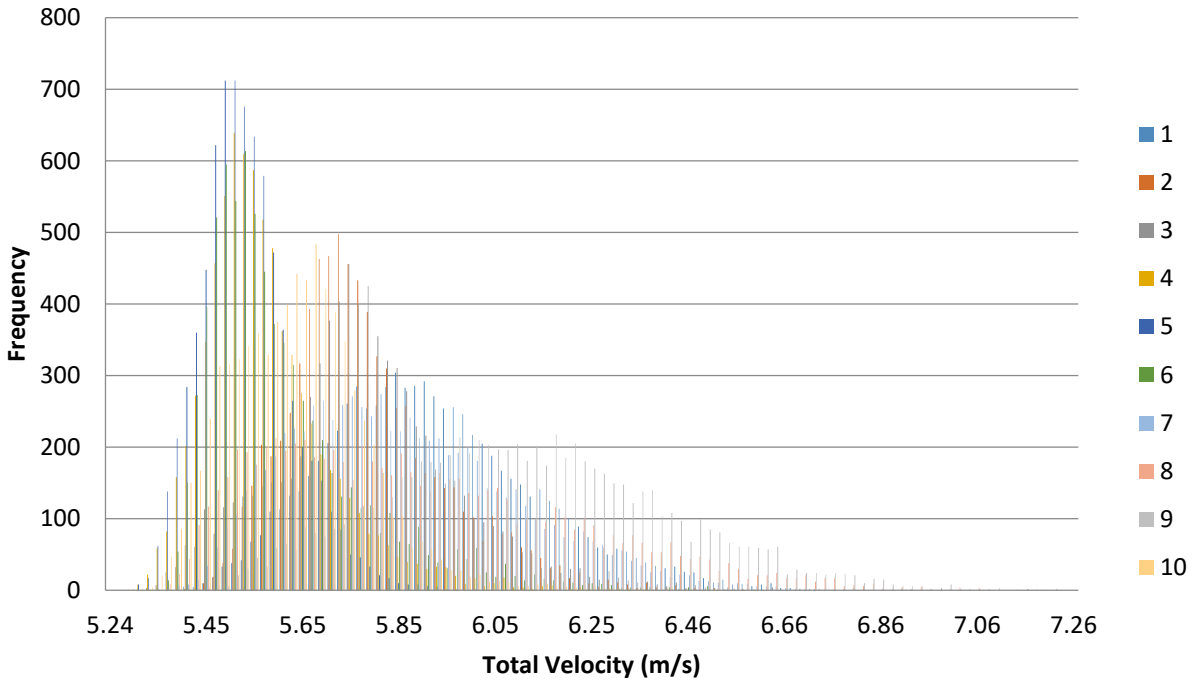


Figure 1. Velocity histogram for each interval (100 bins).

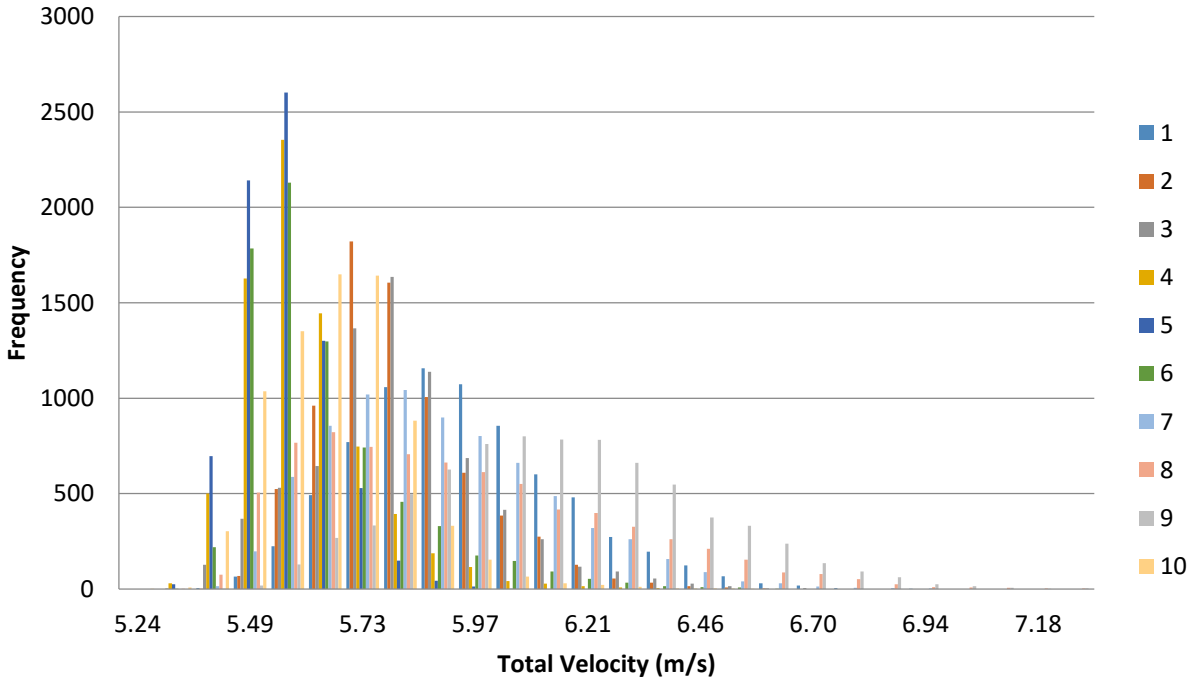
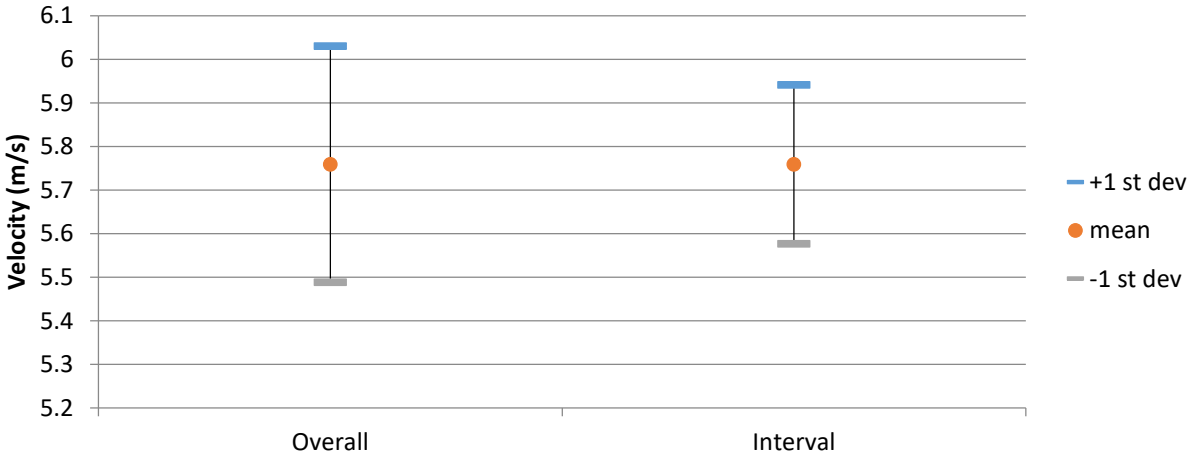
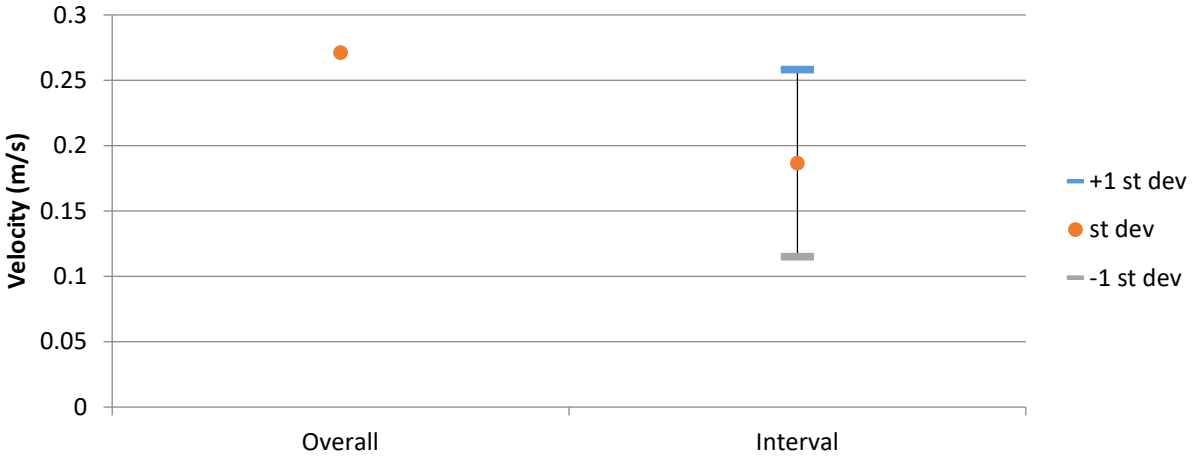


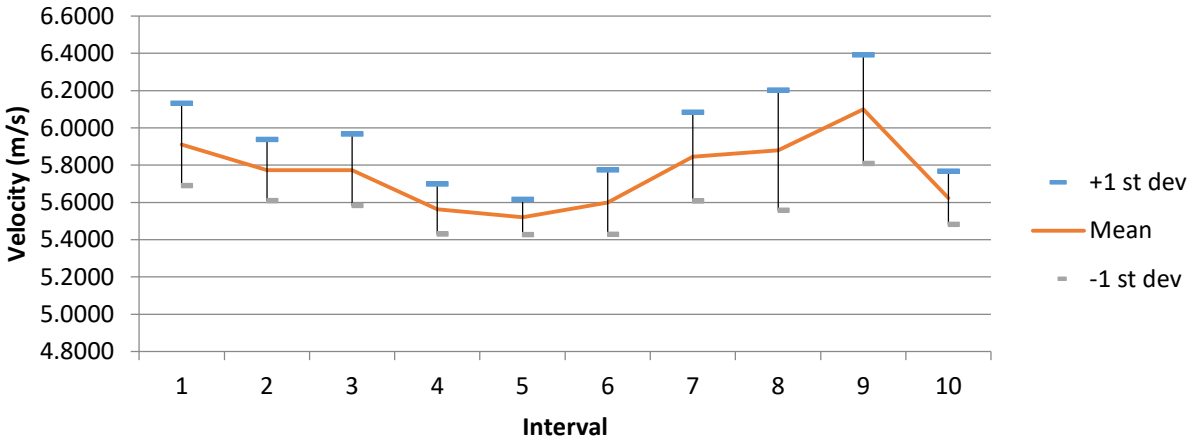
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 104
Blockage Condition: All Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: G3
First Sample Date: 14-Aug-13
First Sample Time: 08:20:51.296

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	6.6407	5.0856	5.5027	0.1948
u	5.2700	4.3500	4.7894	0.0804
v	4.2100	1.3100	2.3598	0.4449
w	-0.4960	-2.2300	-1.2518	0.1988

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	6.6407	5.0901	5.5556	0.1932	3.3604
2	6.4725	5.2682	5.7400	0.1929	2.6188
3	6.2363	5.2259	5.6677	0.1484	3.4508
4	6.1764	5.1886	5.6060	0.1935	1.6958
5	5.8870	5.1114	5.3808	0.0912	2.3547
6	6.1430	5.2841	5.5483	0.1306	1.2322
7	5.8117	5.2565	5.4209	0.0668	0.9630
8	5.5131	5.1616	5.3307	0.0513	1.2876
9	5.5712	5.0856	5.2927	0.0681	2.1316
10	6.0283	5.1873	5.4845	0.1169	2.2772
		Average	5.5027	0.1253	2.1372
		St Dev	0.1471	0.0556	0.8146

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	4.7846	2.5246	-1.1766	0.1088	0.4049	0.2751	2.2742	8.4626	5.7504
2	4.7548	2.8764	-1.3909	0.0774	0.3551	0.1930	1.6279	7.4675	4.0592
3	4.8147	2.6967	-1.2606	0.0679	0.2539	0.1828	1.4099	5.2743	3.7966
4	4.7937	2.6585	-1.1034	0.0567	0.3866	0.2170	1.1824	8.0641	4.5258
5	4.7916	2.1157	-1.2021	0.0580	0.2141	0.1787	1.2108	4.4692	3.7293
6	4.7826	2.4895	-1.2815	0.0430	0.2655	0.1239	0.8990	5.5514	2.5913
7	4.7914	2.1567	-1.3170	0.0572	0.1832	0.1048	1.1938	3.8241	2.1877
8	4.8331	1.8817	-1.2162	0.0678	0.1515	0.1128	1.4024	3.1347	2.3330
9	4.8484	1.7529	-1.1663	0.0826	0.1881	0.1892	1.7034	3.8788	3.9025
10	4.6995	2.4447	-1.4038	0.0602	0.2210	0.0919	1.2815	4.7036	1.9559

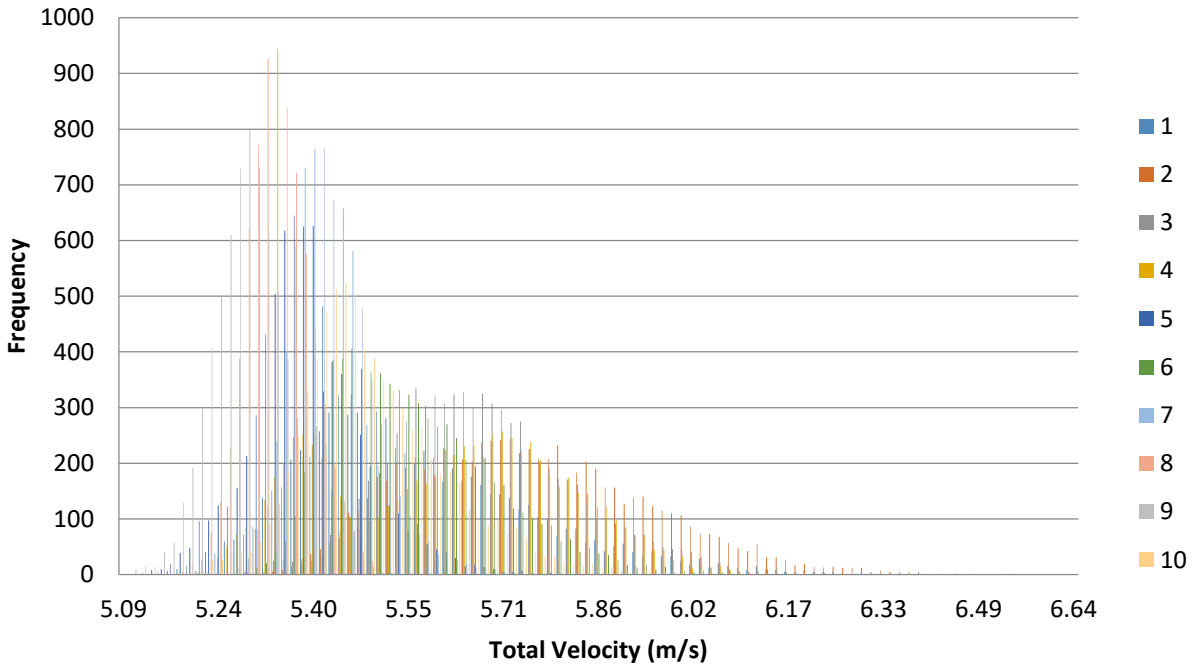


Figure 1. Velocity histogram for each interval (100 bins).

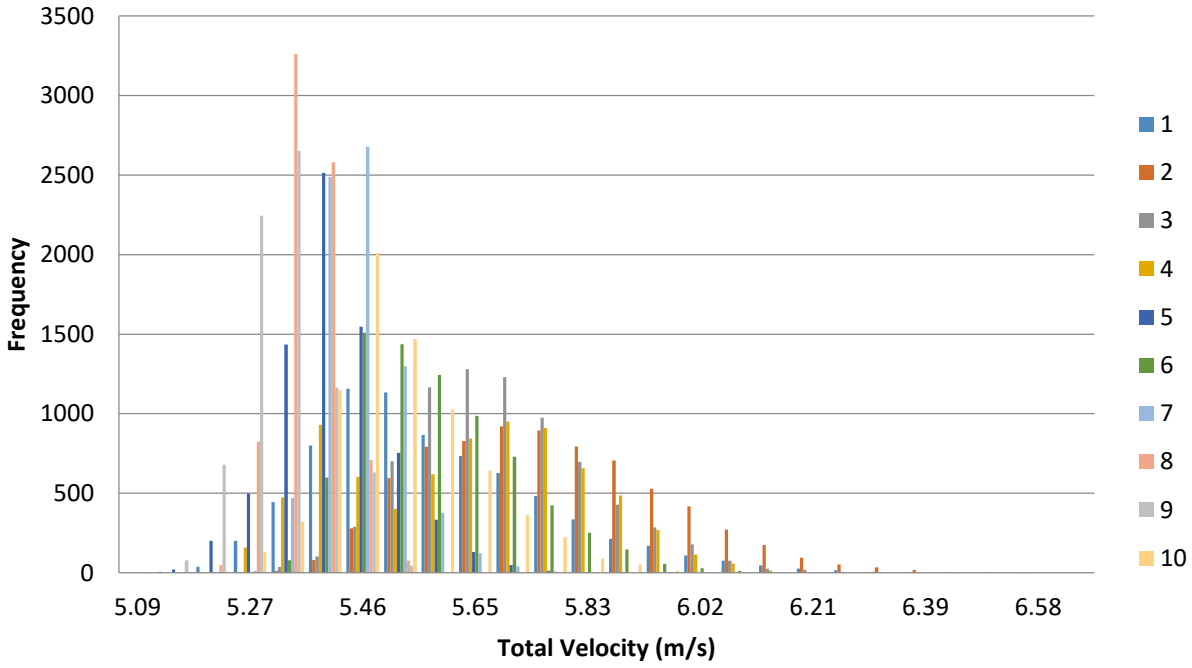
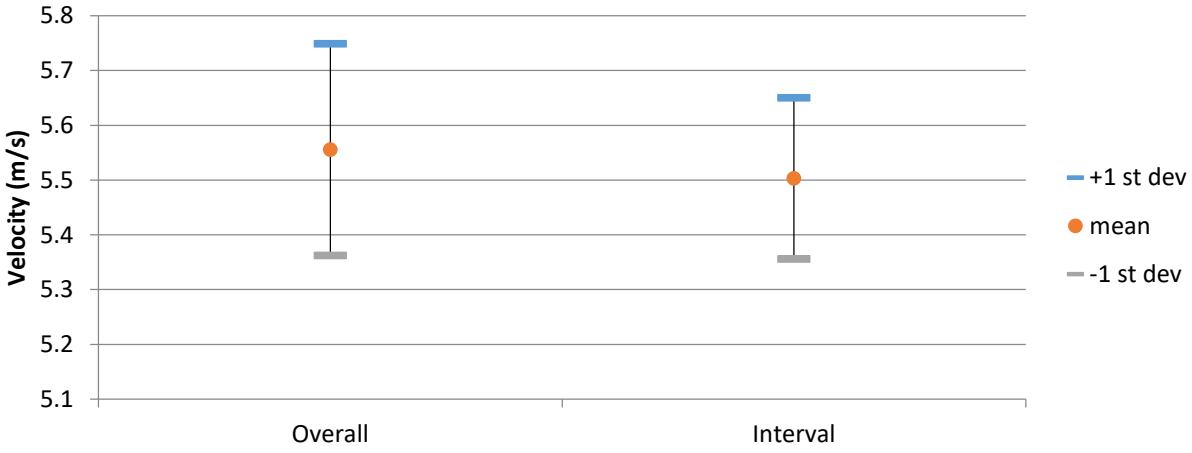
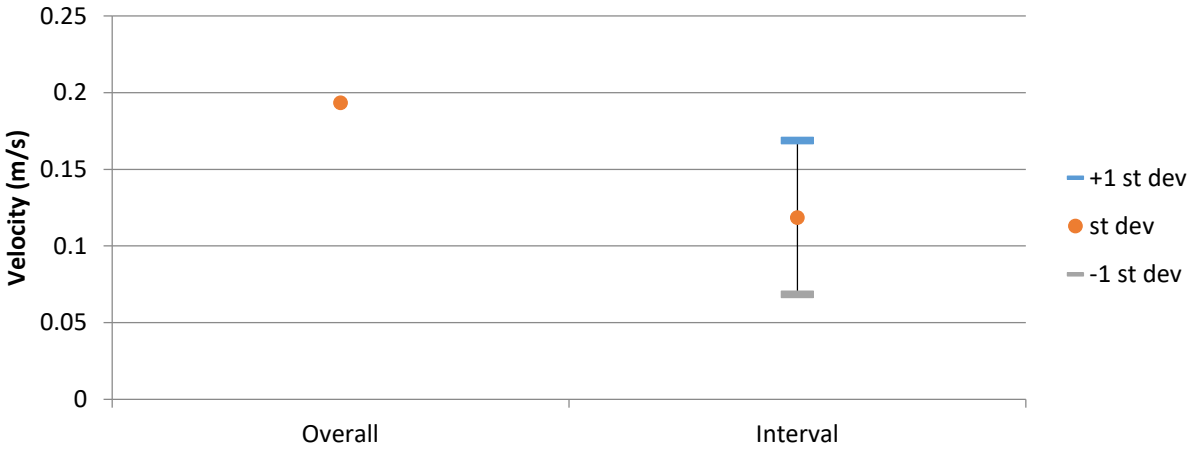


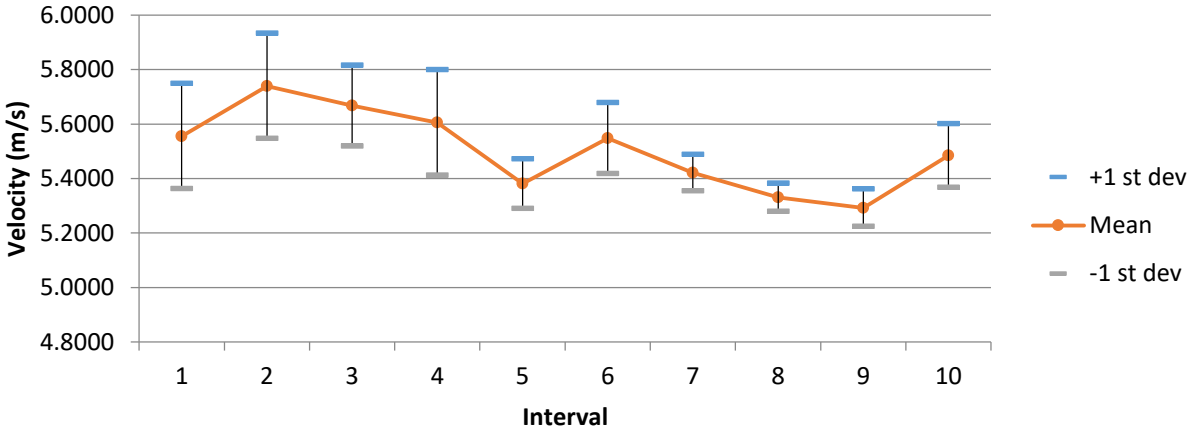
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 105
Blockage Condition: All Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: H3
First Sample Date: 14-Aug-13
First Sample Time: 08:22:31.125

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	6.9152	4.1972	5.5476	0.2046
u	4.6400	2.9600	4.2182	0.1524
v	4.5500	1.3200	3.3552	0.2952
w	-0.2030	-3.1500	-1.2681	0.2210

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	6.9152	4.1972	5.4254	0.3003	5.5342	314	2.51 %
2	6.4506	5.0062	5.6628	0.2473	4.3679	0	0.00 %
3	6.0924	5.0849	5.5789	0.1317	2.3599	0	0.00 %
4	6.2733	5.0142	5.6023	0.1859	3.3182	0	0.00 %
5	6.3061	4.9508	5.5989	0.1897	3.3887	3	0.02 %
6	6.2729	5.0216	5.5552	0.1686	3.0344	0	0.00 %
7	6.3571	5.0644	5.5834	0.1735	3.1078	2	0.02 %
8	6.1815	4.9710	5.5188	0.1557	2.8213	3	0.02 %
9	6.0650	4.9166	5.4921	0.1671	3.0423	10	0.08 %
10	6.0335	4.8171	5.4531	0.1498	2.7472	1	0.01 %
		Average	5.5471	0.1870	3.3722		
		St dev	0.0700	0.0478	0.8764		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	4.1457	3.1668	-1.3386	0.2483	0.4414	0.5114	5.9888	10.6479	12.3353
2	4.2991	3.4852	-1.1706	0.1096	0.3177	0.1274	2.5484	7.3902	2.9630
3	4.2707	3.3986	-1.1410	0.0592	0.1924	0.0974	1.3864	4.5039	2.2816
4	4.2666	3.3999	-1.2453	0.1341	0.2684	0.1285	3.1422	6.2913	3.0112
5	4.1761	3.5045	-1.2506	0.1540	0.2377	0.1351	3.6870	5.6910	3.2351
6	4.2592	3.3267	-1.2532	0.1321	0.2584	0.1632	3.1009	6.0671	3.8313
7	4.2469	3.3932	-1.2437	0.1303	0.2490	0.1682	3.0683	5.8622	3.9616
8	4.2435	3.2448	-1.3561	0.1246	0.2619	0.1491	2.9363	6.1726	3.5133
9	4.1020	3.3559	-1.4114	0.1354	0.2569	0.1609	3.2998	6.2616	3.9232
10	4.1691	3.2683	-1.2737	0.0960	0.2290	0.1085	2.3014	5.4932	2.6036

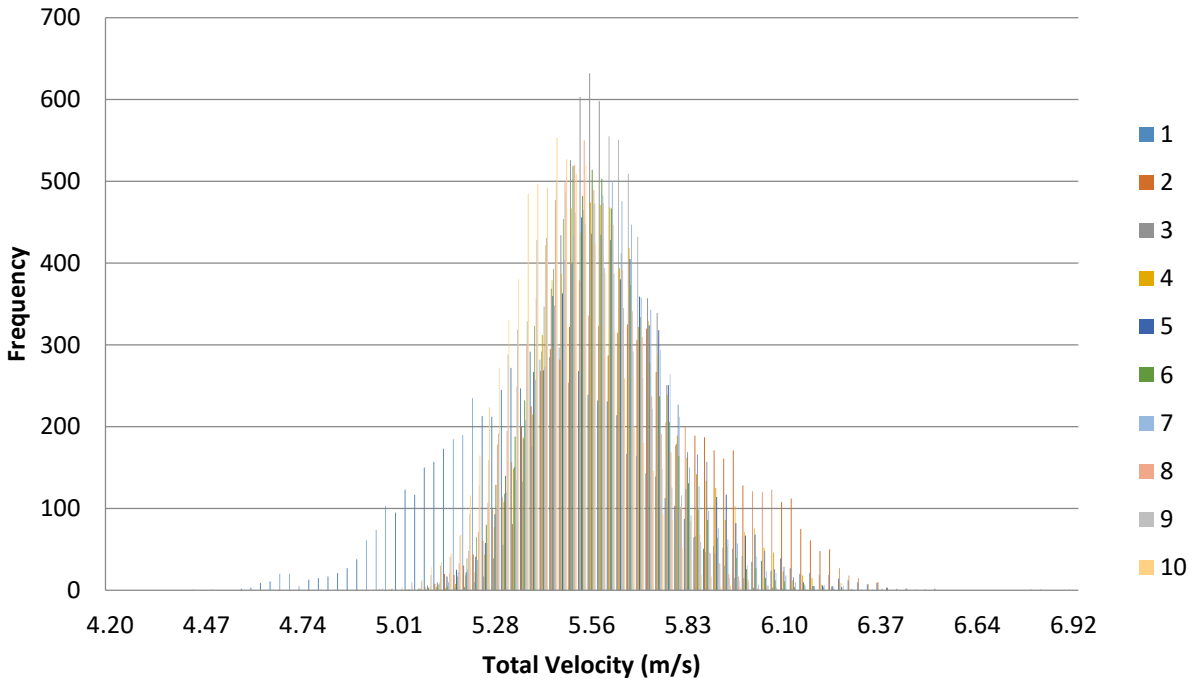


Figure 1. Velocity histogram for each interval (100 bins).

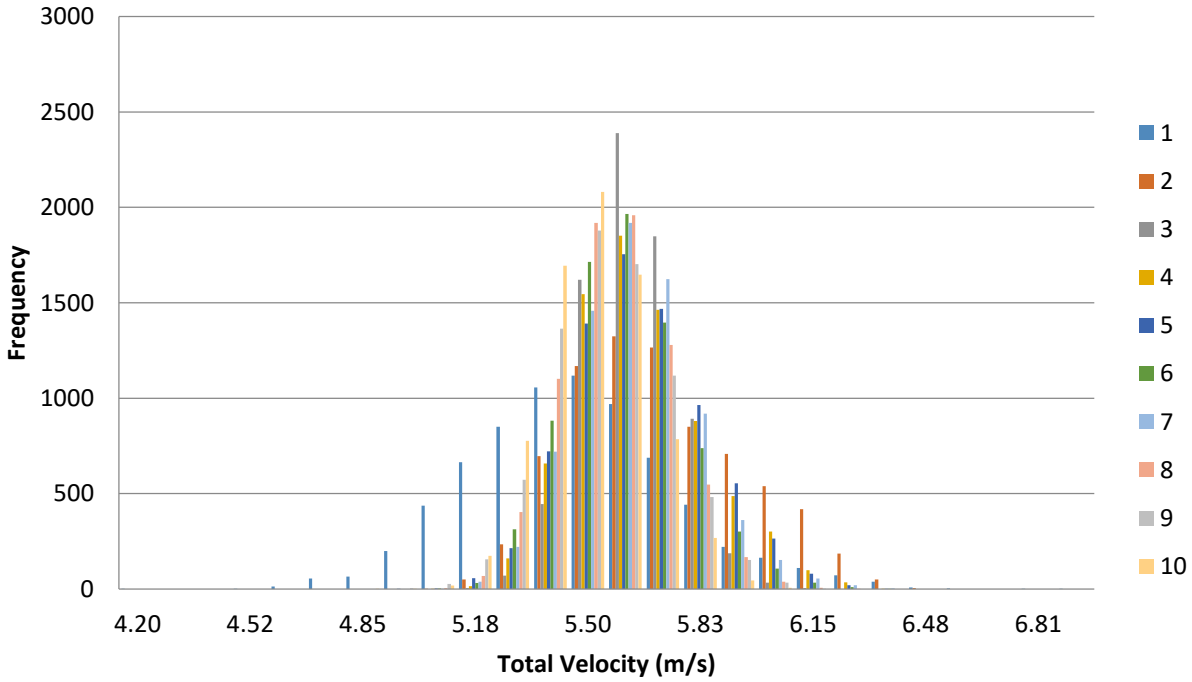
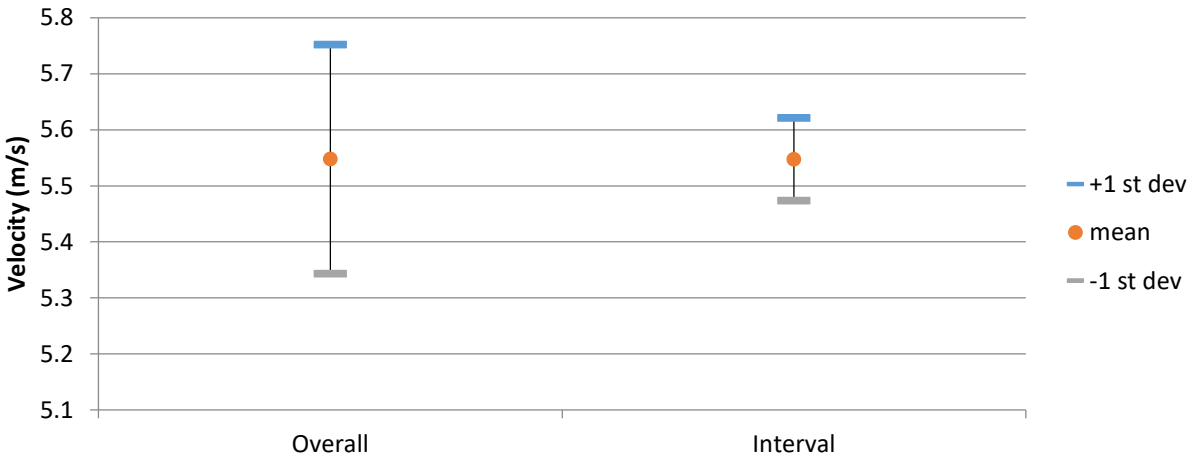
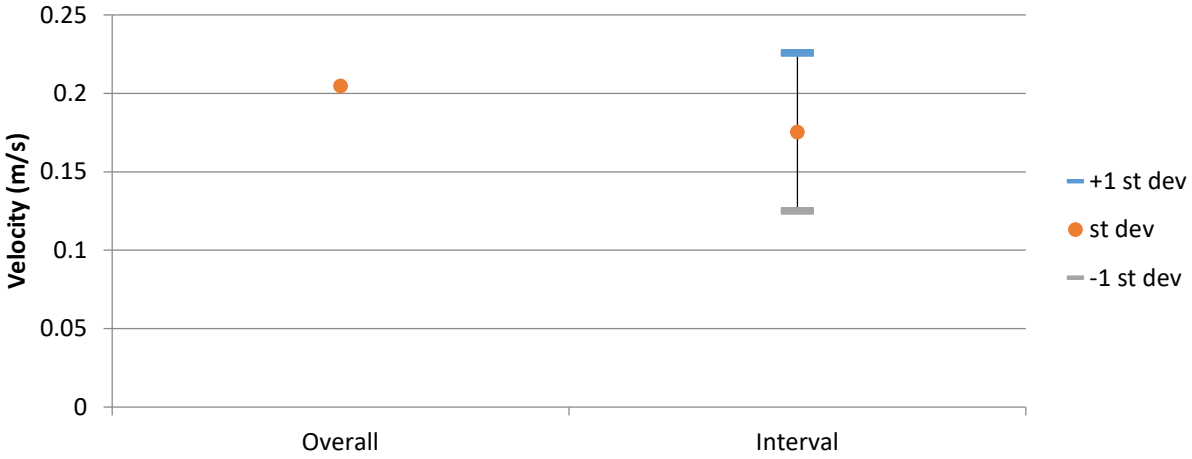


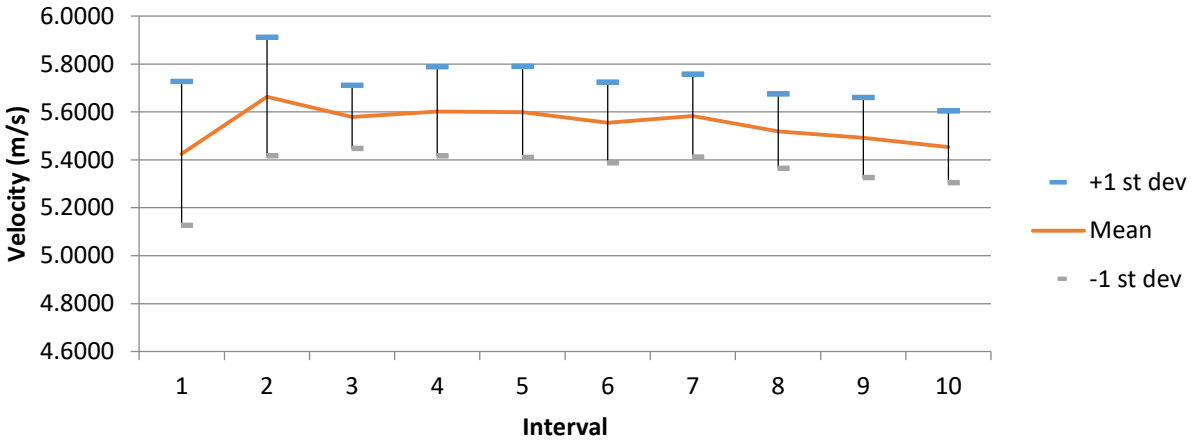
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 106
Blockage Condition: All Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: F3
First Sample Date: 14-Aug-13
First Sample Time: 08:24:55.578

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	6.0480	5.1422	5.5562	0.0787
u	5.8600	4.7600	5.3365	0.1133
v	2.0600	-0.5830	0.6860	0.3454
w	-0.0677	-2.3000	-1.2919	0.3580

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.8266	5.2640	5.5638	0.0903	1.3108
2	5.9458	5.3565	5.5921	0.0733	1.4975
3	6.0480	5.2972	5.5891	0.0837	1.2279
4	5.8844	5.3188	5.5762	0.0685	1.2335
5	5.7419	5.1627	5.5254	0.0682	1.2468
6	5.7885	5.2750	5.5234	0.0689	1.2318
7	5.7795	5.3064	5.5350	0.0682	1.2561
8	5.8506	5.3263	5.5459	0.0697	1.5878
9	5.8564	5.1893	5.5537	0.0882	1.2196
10	5.8346	5.1422	5.5576	0.0678	1.3437
		Average	5.5562	0.0747	1.3155
		St Dev	0.0245	0.0091	0.1212

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.1967	0.8683	-1.7666	0.1318	0.2115	0.1466	2.5359	4.0697	2.8204
2	5.3850	0.6747	-1.3024	0.0657	0.2550	0.2409	1.2195	4.7345	4.4744
3	5.3721	0.6188	-1.3351	0.1145	0.2876	0.3536	2.1321	5.3542	6.5825
4	5.3849	0.2795	-1.3078	0.1064	0.4661	0.2905	1.9763	8.6560	5.3951
5	5.2975	0.7149	-1.3638	0.0642	0.1894	0.2451	1.2115	3.5744	4.6276
6	5.3092	0.8202	-1.2243	0.0609	0.3471	0.1698	1.1473	6.5383	3.1991
7	5.3085	0.9537	-1.1803	0.0691	0.2363	0.3109	1.3014	4.4504	5.8562
8	5.3871	0.5801	-1.1258	0.0834	0.2414	0.2664	1.5473	4.4803	4.9444
9	5.2973	0.5709	-1.4780	0.1284	0.3265	0.3965	2.4239	6.1641	7.4857
10	5.4262	0.7794	-0.8349	0.0738	0.2824	0.2404	1.3593	5.2041	4.4305

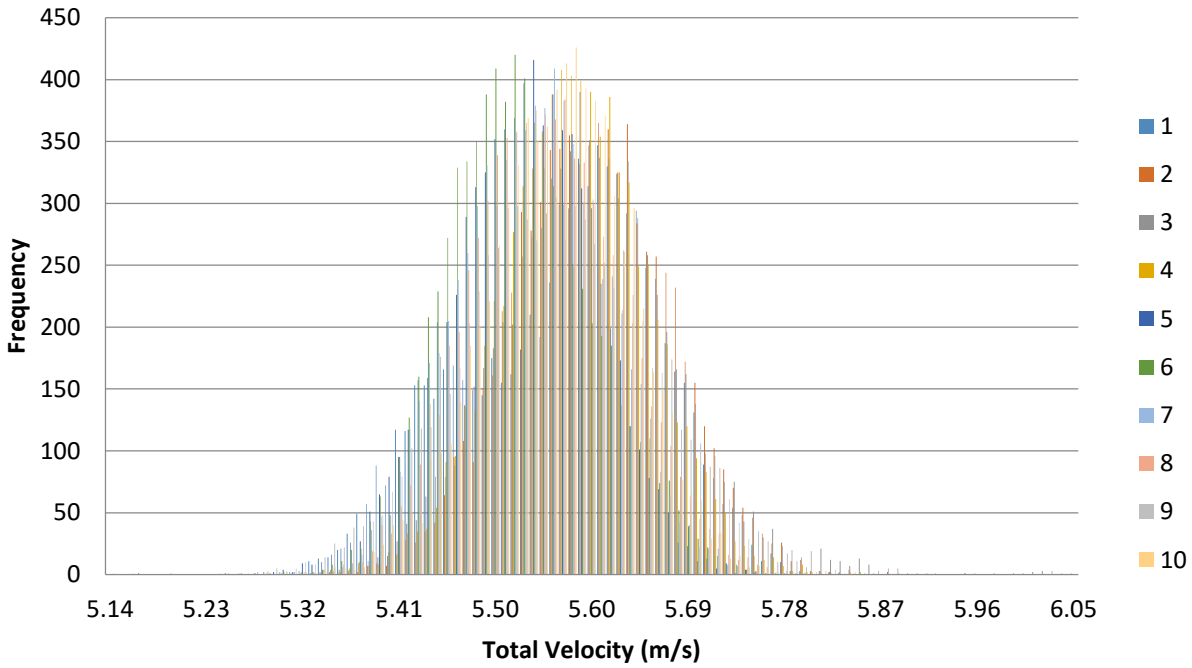


Figure 1. Velocity histogram for each interval (100 bins).

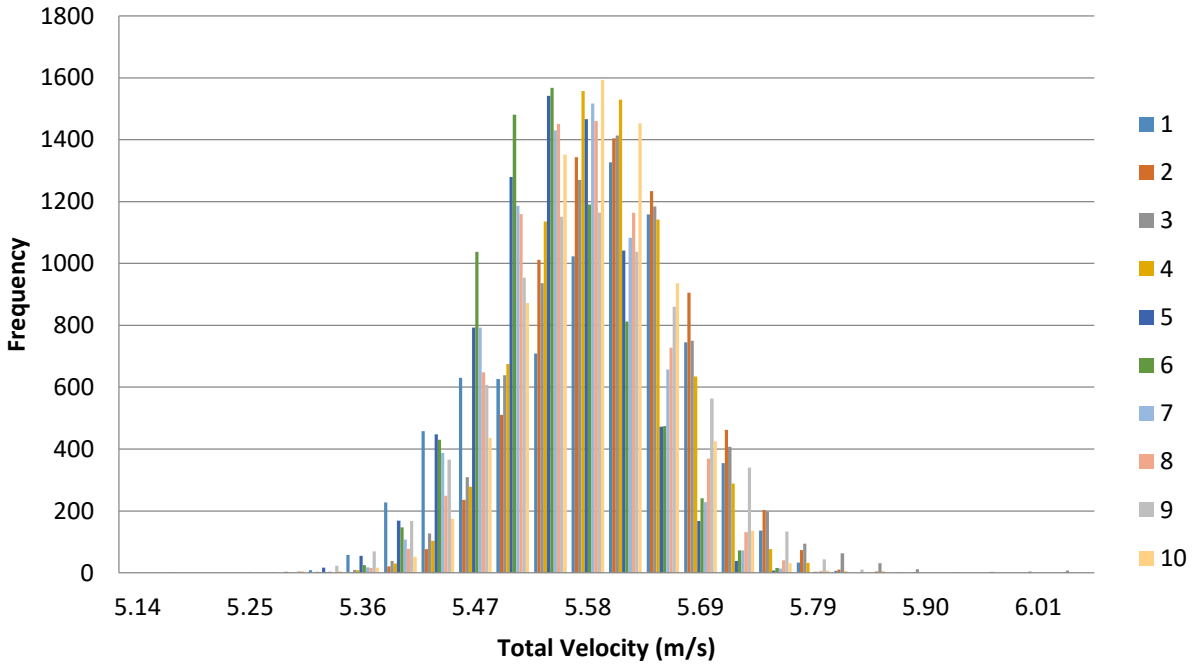
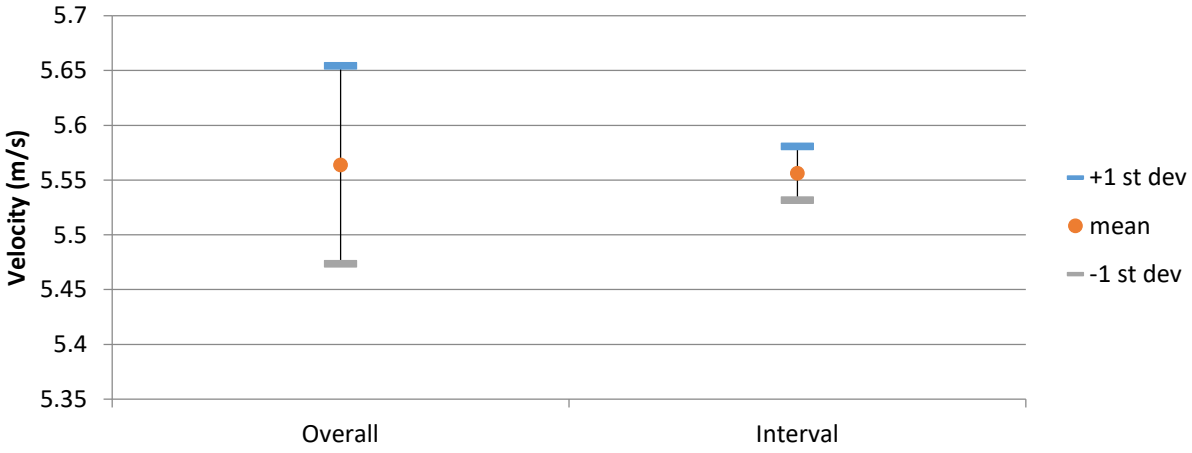
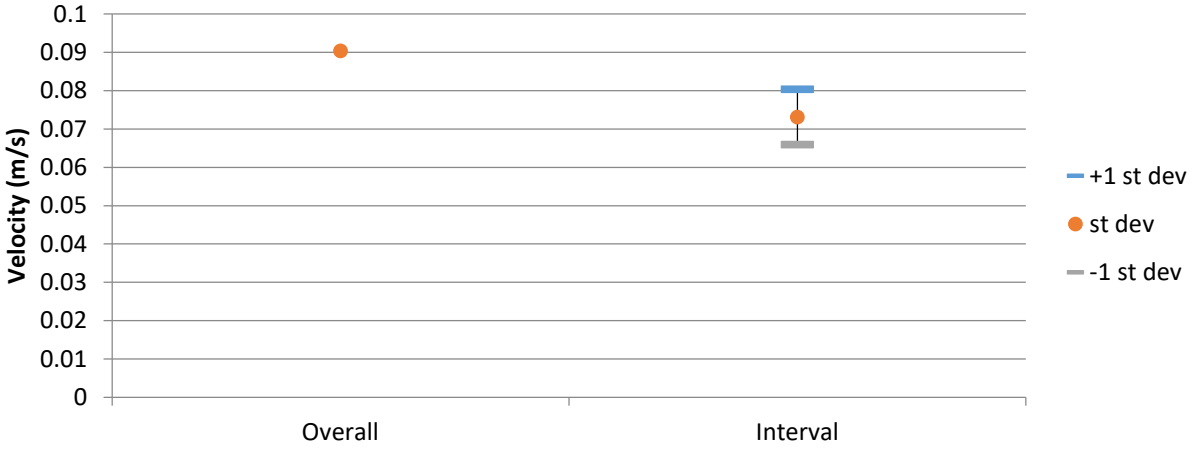


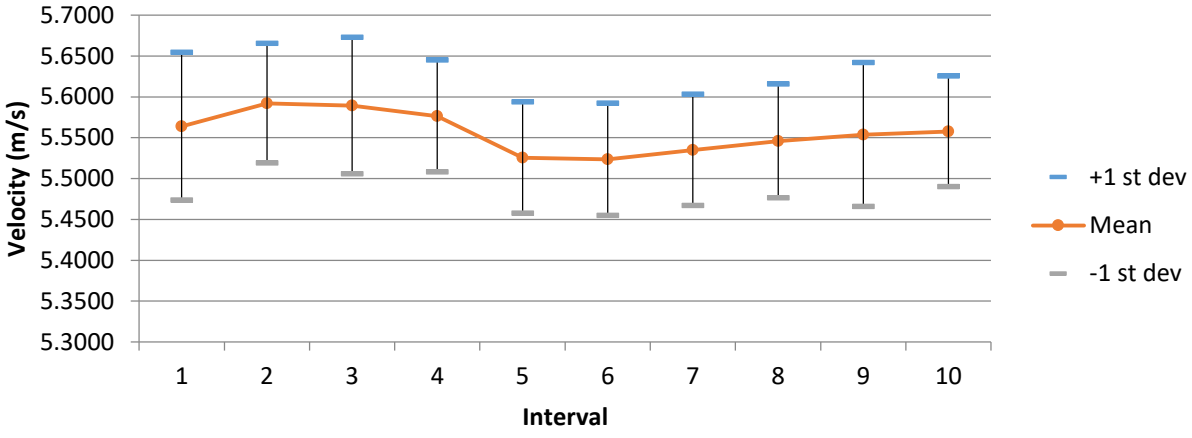
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 107
Blockage Condition: All Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 14-Aug-13
First Sample Time: 08:26:42.296

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	6.3854	5.5120	5.8563	0.1026
u	6.2700	5.0800	5.6799	0.1199
v	1.0500	-1.3700	-0.2472	0.3287
w	0.0123	-2.5100	-1.3014	0.4109

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	6.0970	5.5781	5.8651	0.0782	1.7978
2	6.3395	5.5987	5.9547	0.1071	1.7967
3	6.2380	5.5416	5.8691	0.1055	1.0194
4	5.9909	5.5120	5.7581	0.0587	1.4220
5	6.2410	5.5291	5.7874	0.0823	1.6226
6	6.1596	5.5363	5.8661	0.0952	1.2090
7	6.1322	5.5846	5.8400	0.0706	1.3160
8	6.1282	5.5986	5.8470	0.0769	0.9357
9	6.0352	5.6592	5.8463	0.0547	1.9343
10	6.3854	5.5489	5.9292	0.1147	1.4408
		Average	5.8563	0.0844	1.4494
		St Dev	0.0579	0.0206	0.3213

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.5568	0.0934	-1.8255	0.0987	0.3286	0.2603	1.7766	5.9138	4.6849
2	5.7312	-0.3173	-1.4839	0.0811	0.4498	0.3344	1.4154	7.8487	5.8347
3	5.6489	-0.3455	-1.5127	0.0659	0.2624	0.2591	1.1663	4.6460	4.5862
4	5.5995	-0.2888	-1.2876	0.0617	0.1489	0.1930	1.1025	2.6587	3.4465
5	5.7104	-0.2443	-0.8357	0.0974	0.2695	0.2266	1.7058	4.7189	3.9678
6	5.7991	-0.3255	-0.7829	0.0978	0.1541	0.1972	1.6860	2.6573	3.3999
7	5.6464	-0.4502	-1.3734	0.0796	0.2483	0.2694	1.4096	4.3979	4.7718
8	5.6746	-0.5018	-1.2950	0.0645	0.1662	0.1796	1.1367	2.9288	3.1649
9	5.7021	-0.0226	-1.2391	0.0670	0.2747	0.2289	1.1759	4.8167	4.0148
10	5.7295	-0.0697	-1.3783	0.2021	0.3031	0.5512	3.5280	5.2908	9.6206

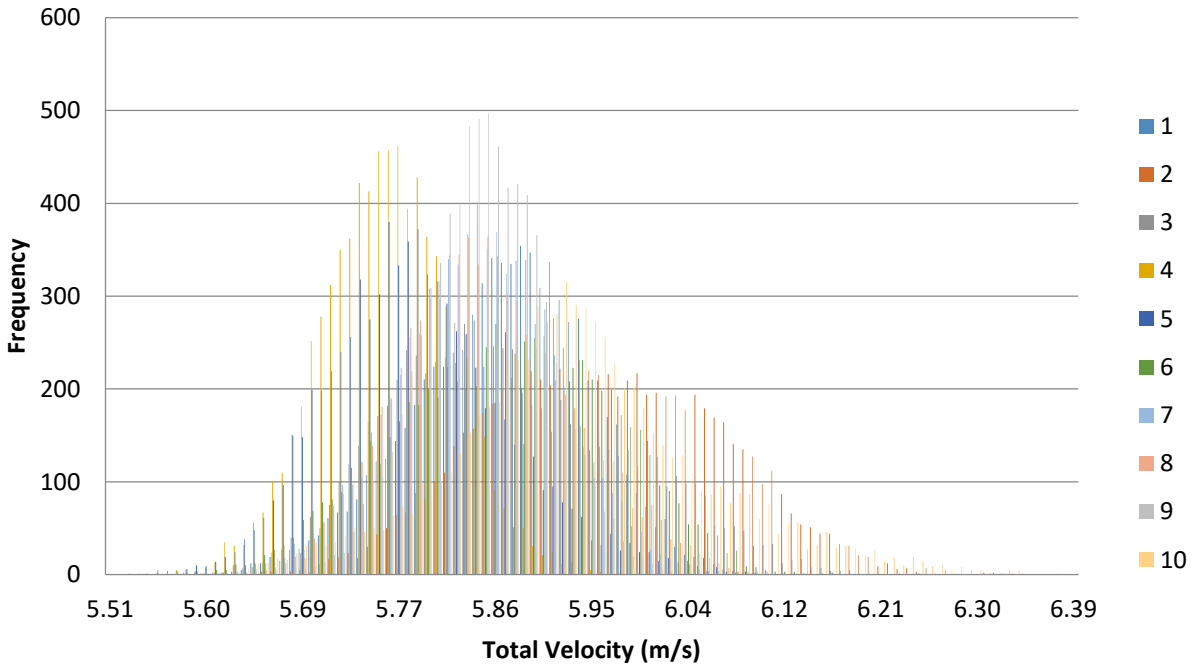


Figure 1. Velocity histogram for each interval (100 bins).

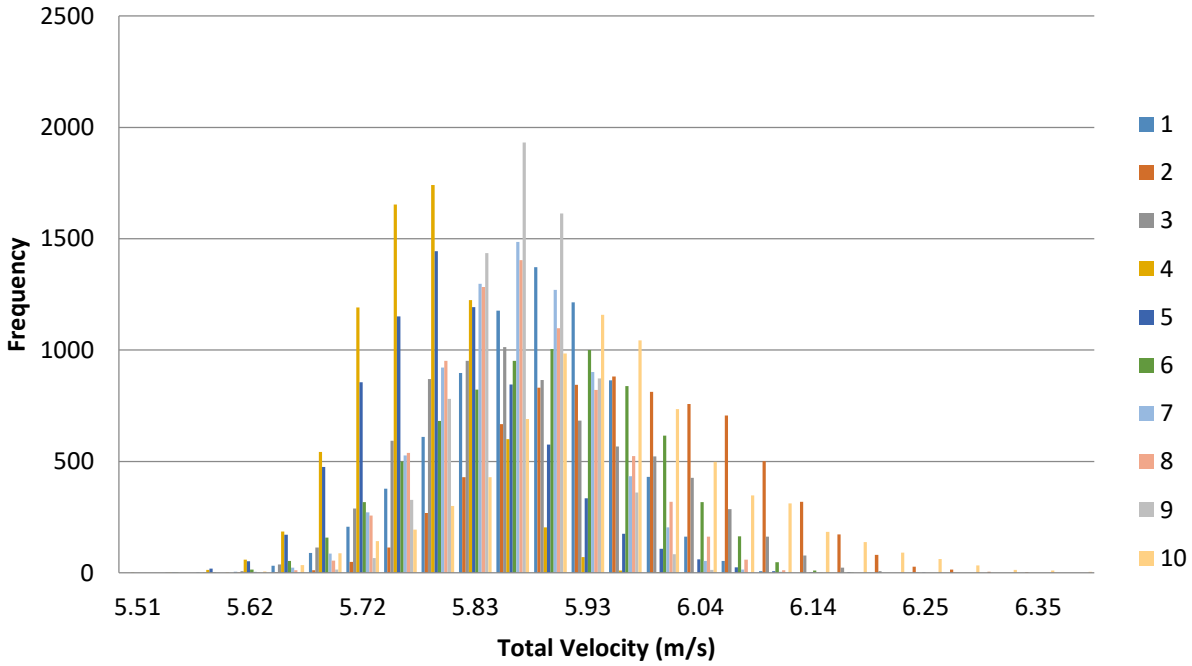
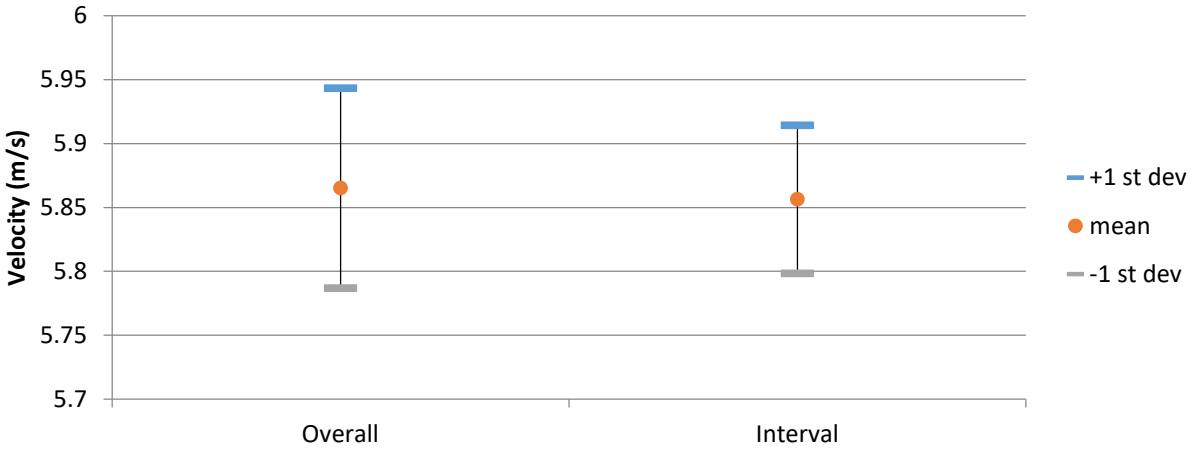
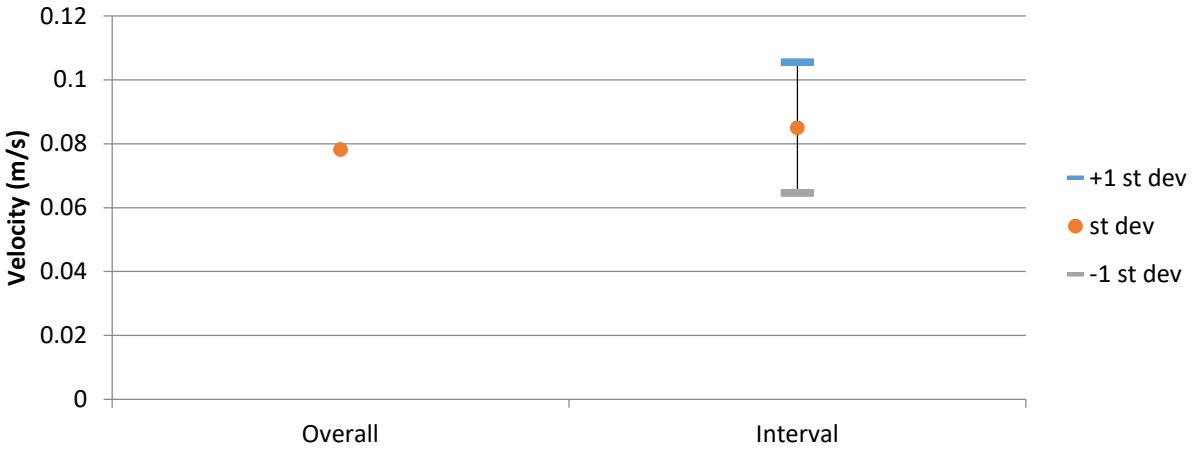


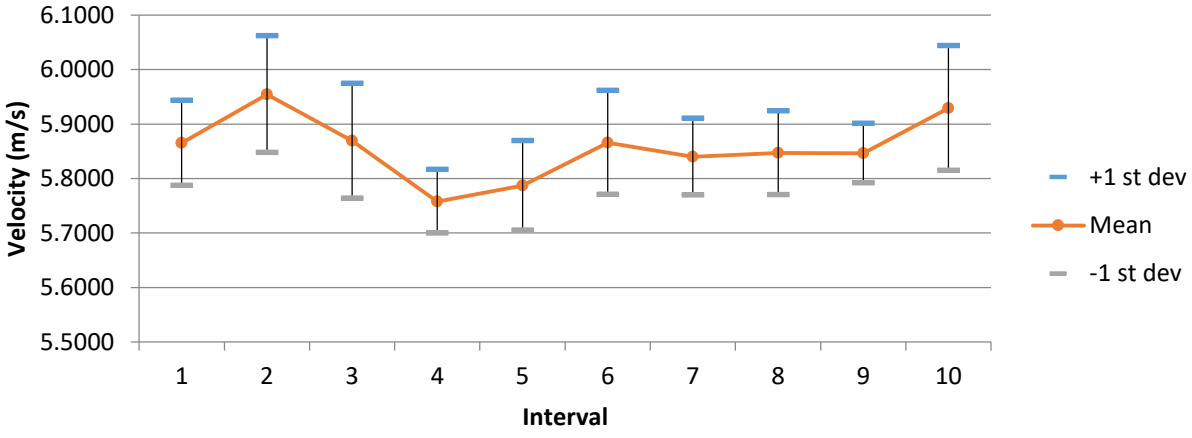
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 108
Blockage Condition: All Buildings.
Blower Frequency: 42 Hz
Inlet Probe Location: E3
First Sample Date: 14-Aug-13
First Sample Time: 08:28:37.640

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.4365	8.9158	9.4604	0.1376
u	10.3000	8.2600	9.1792	0.1441
v	2.5600	-2.2300	-0.1164	0.5780
w	-0.6540	-3.9100	-2.1526	0.5083

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	9.8386	8.9158	9.3817	0.1157	1.3016
2	10.0109	9.0116	9.3988	0.1223	1.3708
3	10.0000	9.0336	9.5238	0.1306	1.4852
4	10.0570	8.9294	9.5171	0.1413	1.3243
5	10.4365	8.9255	9.4416	0.1250	1.3766
6	10.2588	8.9880	9.4786	0.1305	1.2932
7	9.9077	9.0616	9.4830	0.1226	1.2966
8	9.8633	8.9876	9.4623	0.1227	1.2094
9	9.7892	8.9665	9.3928	0.1136	1.5309
10	10.1721	9.0125	9.5246	0.1458	1.3427
		Average	9.4604	0.1270	1.3531
		St Dev	0.0549	0.0103	0.0900

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.2276	-0.6239	-1.5244	0.1186	0.3306	0.2095	1.2857	3.5825	2.2707
2	9.1564	-0.3758	-2.0164	0.1319	0.2970	0.4470	1.4406	3.2436	4.8817
3	9.0843	-0.6124	-2.7472	0.1268	0.2459	0.4434	1.3963	2.7067	4.8812
4	9.1706	0.3735	-2.3710	0.1682	0.7069	0.4530	1.8346	7.7082	4.9402
5	9.1687	0.1066	-2.2073	0.1302	0.3569	0.2604	1.4195	3.8928	2.8402
6	9.2156	0.2430	-2.1412	0.1554	0.3072	0.4138	1.6861	3.3333	4.4897
7	9.1740	-0.1230	-2.3307	0.1311	0.3998	0.3926	1.4289	4.3584	4.2792
8	9.1635	0.2888	-2.2702	0.1371	0.3525	0.4462	1.4963	3.8471	4.8690
9	9.2167	-0.2774	-1.7262	0.1318	0.3437	0.3131	1.4300	3.7288	3.3975
10	9.2148	-0.1640	-2.1912	0.1450	0.8815	0.4485	1.5734	9.5660	4.8670

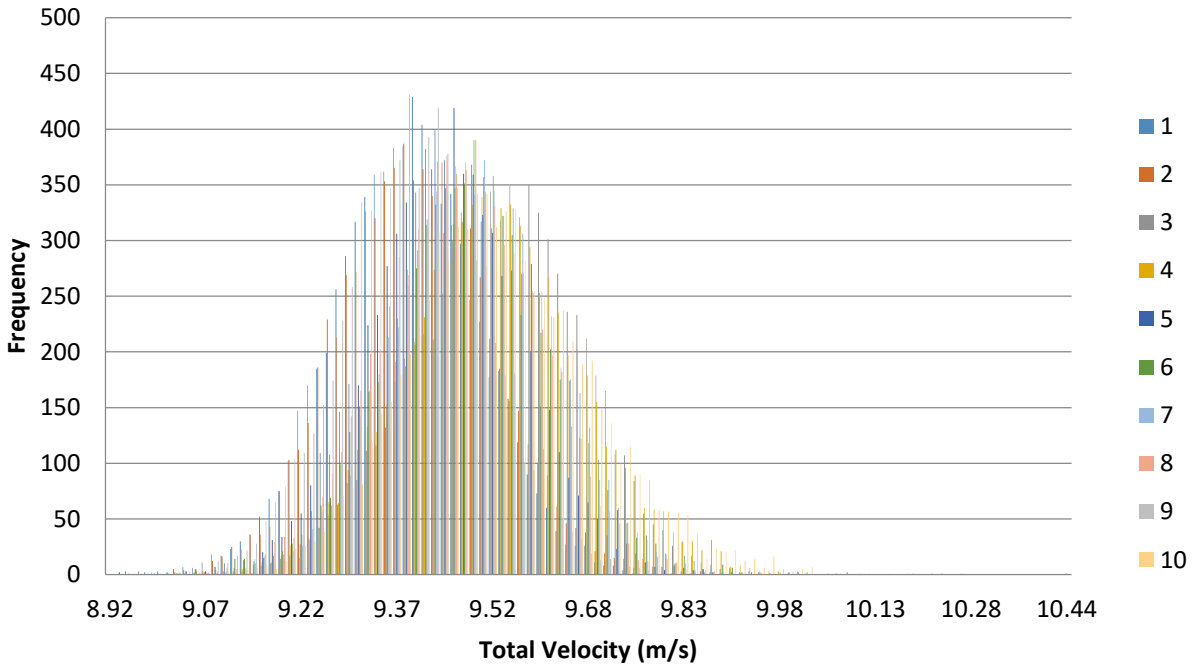


Figure 1. Velocity histogram for each interval (100 bins).

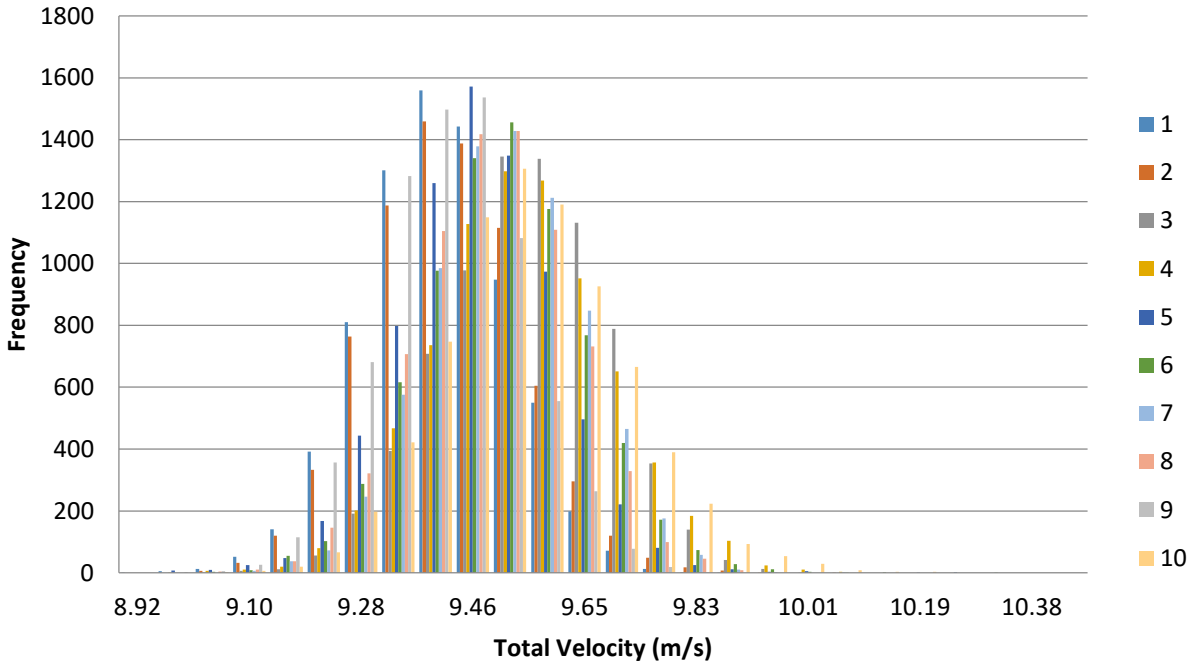
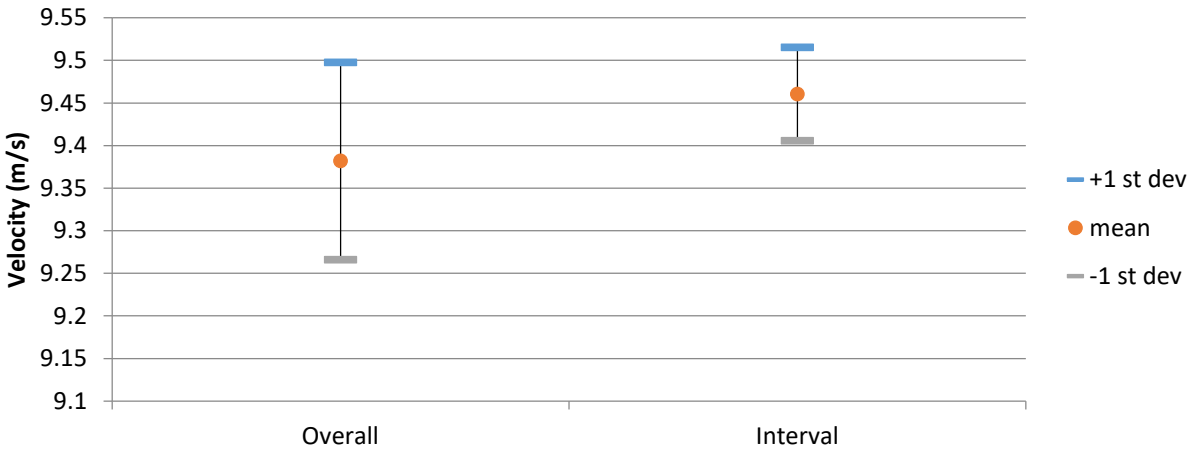
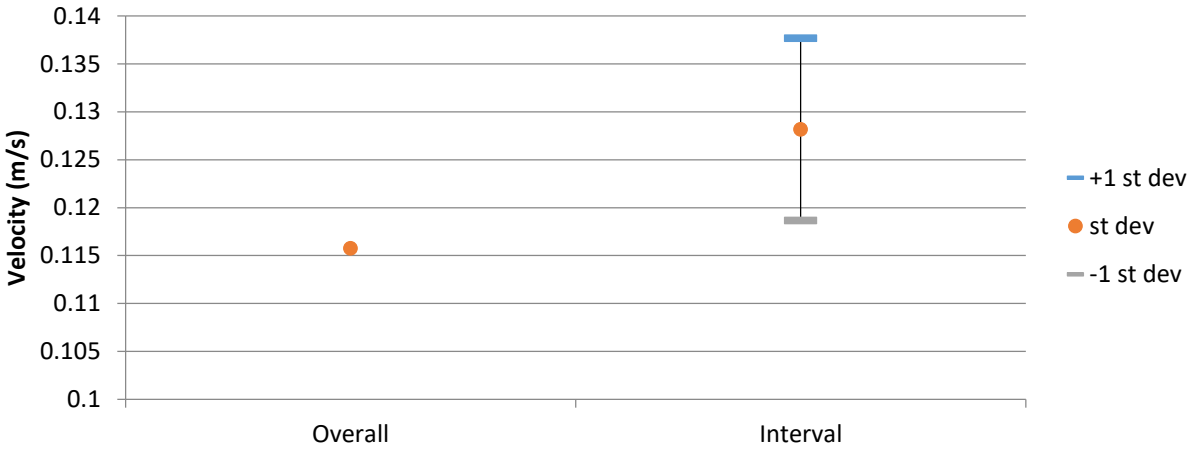


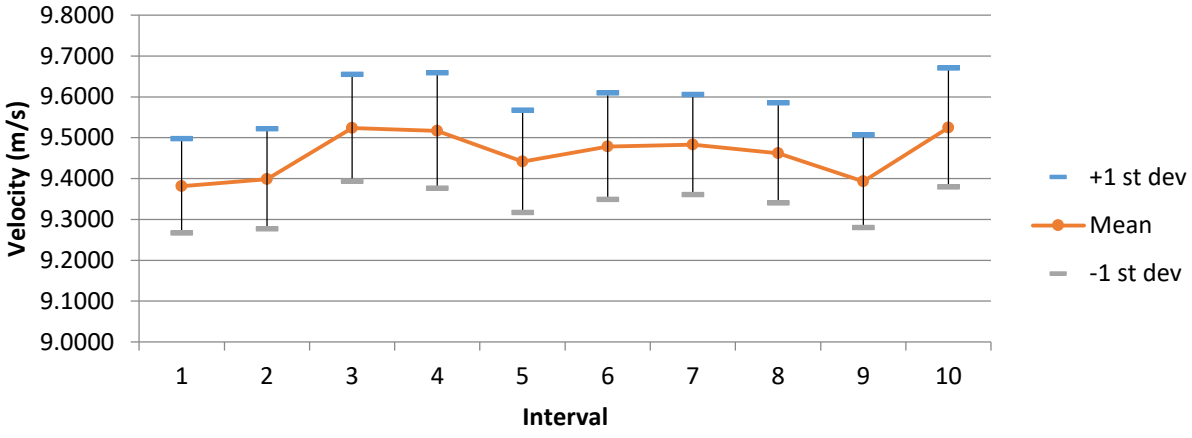
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 109
Blockage Condition: All Buildings.
Blower Frequency: 42 Hz
Inlet Probe Location: E3
First Sample Date: 14-Aug-13
First Sample Time: 08:32:18.546

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.1724	1.0903	3.8222	2.5956
u	10.1000	0.7790	3.6497	2.5381
v	2.6900	-1.5500	0.1876	0.5035
w	1.1400	-3.5100	-0.8108	0.7987

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	10.1724	8.0822	9.2945	0.2709	2.9147	0	0.00 %
2	9.7003	5.8842	7.5458	0.7209	9.5530	0	0.00 %
3	6.7314	4.0766	5.4431	0.6285	11.5461	0	0.00 %
4	4.7491	2.4581	3.4189	0.5181	15.1549	0	0.00 %
5	3.6081	1.9759	2.8246	0.1809	6.4037	0	0.00 %
6	3.2367	1.4253	2.4296	0.1990	8.1887	0	0.00 %
7	2.4758	1.8610	2.0952	0.0849	4.0521	0	0.00 %
8	2.3219	1.4871	1.8528	0.1071	5.7790	0	0.00 %
9	2.0524	1.2910	1.7022	0.1241	7.2898	0	0.00 %
10	2.5898	1.0903	1.5731	0.1542	9.8036	140	1.12 %
		Average	3.8180	0.2988	8.0686		
		St dev	2.5681	0.2222	3.4475		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.0530	0.4824	-1.8430	0.2546	0.5030	0.7463	2.8128	5.5565	8.2439
2	7.2846	0.6262	-1.5885	0.6991	0.7076	0.6996	9.5964	9.7138	9.6039
3	5.1727	-0.3026	-1.5544	0.6718	0.3116	0.4577	12.9870	6.0247	8.8491
4	3.0901	-0.2425	-1.3556	0.4437	0.3521	0.4379	14.3579	11.3960	14.1714
5	2.7054	-0.1737	-0.3830	0.1921	0.4170	0.5513	7.1009	15.4124	20.3774
6	2.3755	0.0760	-0.2753	0.1744	0.2701	0.3384	7.3416	11.3716	14.2440
7	2.0099	0.1700	-0.4612	0.1271	0.2331	0.2126	6.3215	11.5995	10.5762
8	1.7720	0.2623	-0.2748	0.0961	0.1776	0.3452	5.4219	10.0253	19.4800
9	1.6005	0.4236	-0.0430	0.1010	0.3478	0.1966	6.3108	21.7320	12.2841
10	1.3906	0.5611	-0.3202	0.1257	0.2383	0.2734	9.0388	17.1373	19.6577

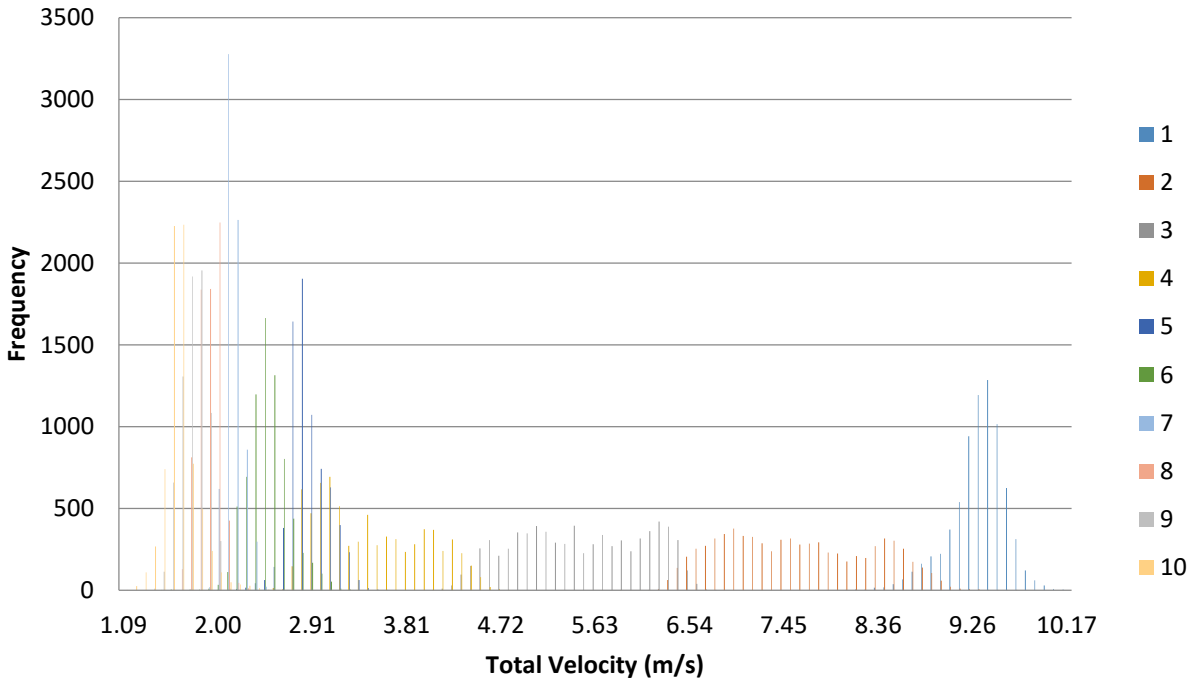


Figure 1. Velocity histogram for each interval (100 bins).

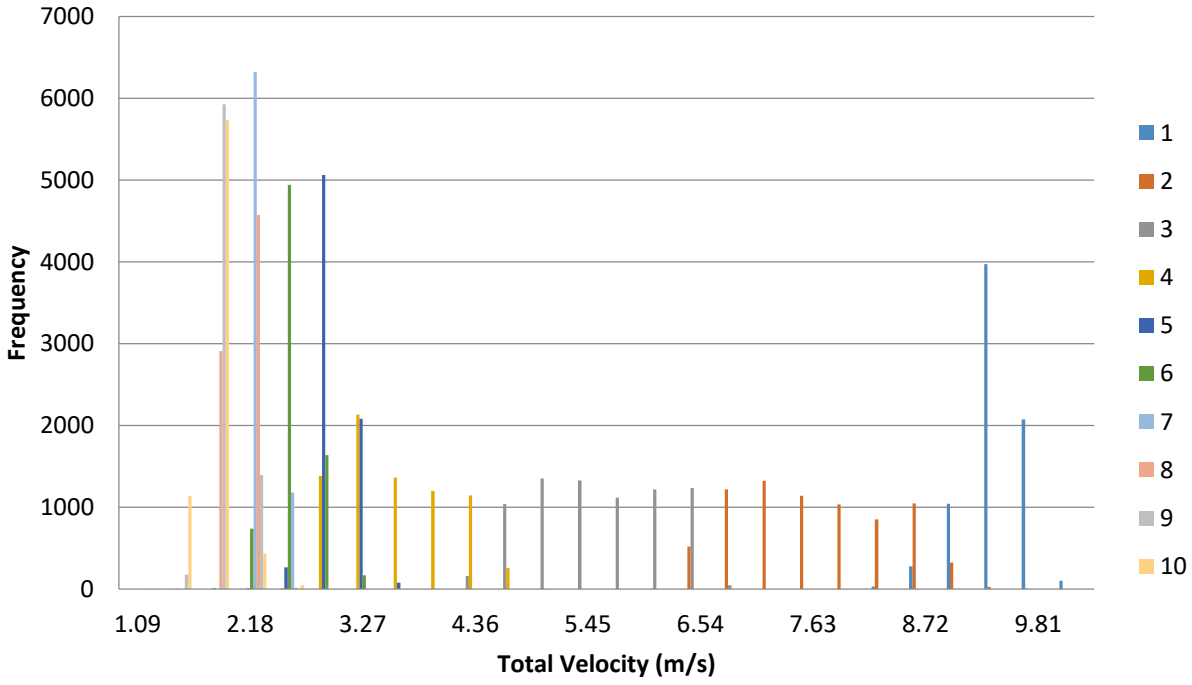
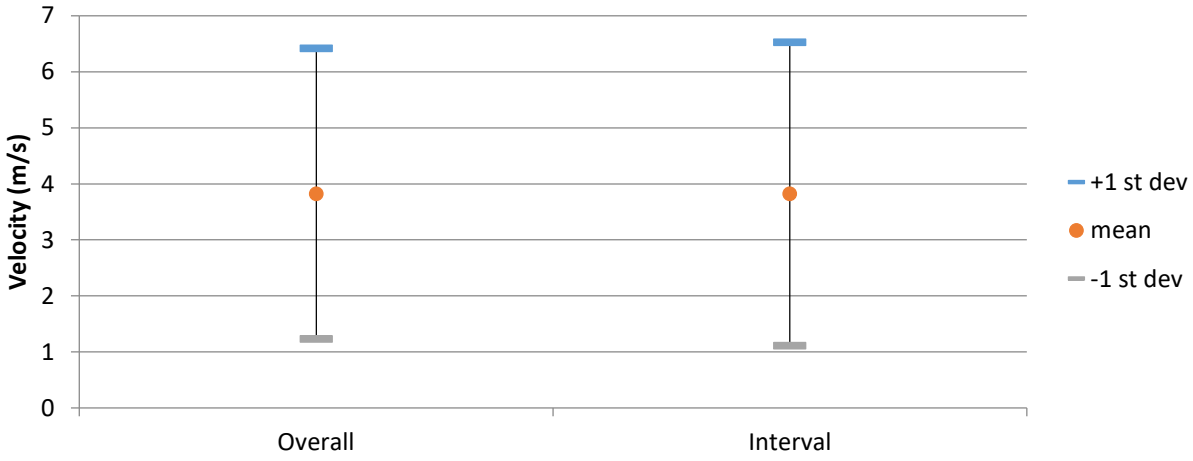
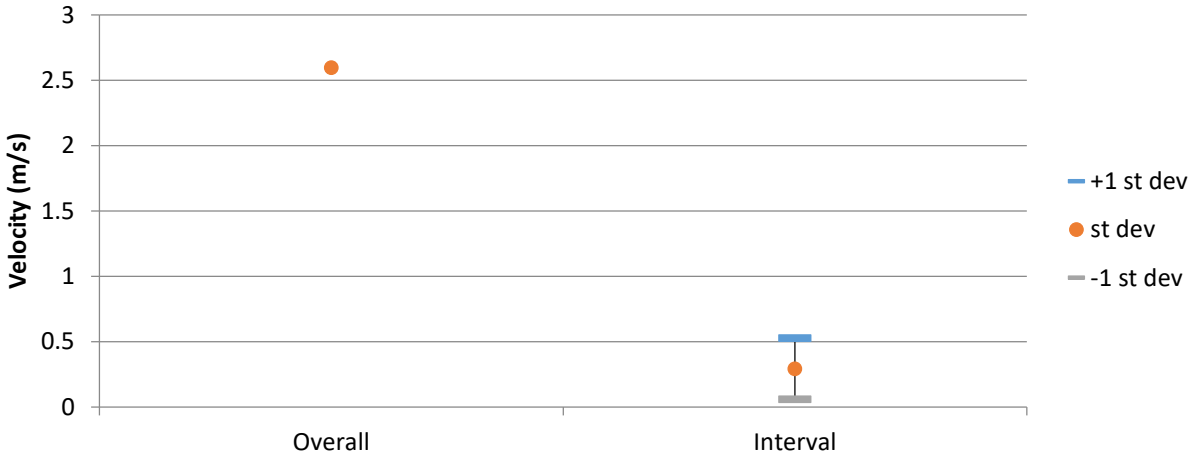


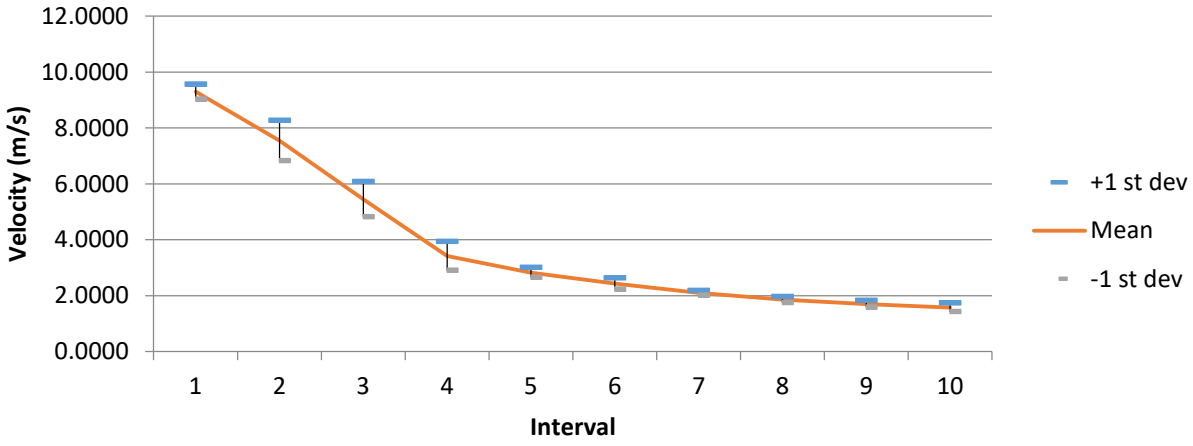
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 110
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 14-Aug-13
First Sample Time: 08:54:51.093

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.1622	10.3167	11.0438	0.1986
u	11.7000	9.3100	10.7495	0.2512
v	2.3500	-2.1900	-0.1256	0.6615
w	0.0527	-4.9100	-2.3315	0.7086

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.6017	10.3691	11.0676	0.1715	1.6322
2	11.7582	10.3419	10.9675	0.1790	1.5696
3	11.5912	10.4222	11.0071	0.1728	1.5393
4	11.6378	10.4331	11.0232	0.1697	1.5073
5	11.6261	10.3167	10.9606	0.1652	1.4151
6	11.5164	10.4366	10.9839	0.1554	1.7290
7	11.7815	10.4205	11.1135	0.1922	1.8757
8	12.1622	10.3451	10.9898	0.2061	1.7043
9	11.9217	10.4445	11.0715	0.1887	1.6998
10	11.8618	10.5724	11.2539	0.1913	1.6226
		Average	11.0439	0.1792	1.6295
		St Dev	0.0890	0.0152	0.1240

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.6337	0.1876	-2.9913	0.2315	0.3834	0.5108	2.1768	3.6053	4.8036
2	10.6520	-0.7903	-2.3697	0.1806	0.5179	0.5579	1.6950	4.8621	5.2375
3	10.6929	-0.0083	-2.5352	0.1635	0.3971	0.4853	1.5287	3.7141	4.5387
4	10.7347	0.4508	-2.2972	0.1762	0.6522	0.6070	1.6413	6.0754	5.6542
5	10.7486	-0.1977	-2.0728	0.1688	0.3686	0.3590	1.5700	3.4297	3.3401
6	10.7520	0.2080	-2.1333	0.1634	0.5822	0.3232	1.5200	5.4150	3.0056
7	10.8126	0.3632	-2.3574	0.1802	0.4808	0.8248	1.6663	4.4464	7.6285
8	10.5593	-0.7659	-2.6270	0.4148	0.4820	1.1944	3.9279	4.5644	11.3117
9	10.8741	-0.0382	-1.9610	0.1728	0.5536	0.4306	1.5888	5.0913	3.9595
10	11.0347	-0.6654	-1.9708	0.1853	0.4270	0.6150	1.6790	3.8698	5.5738

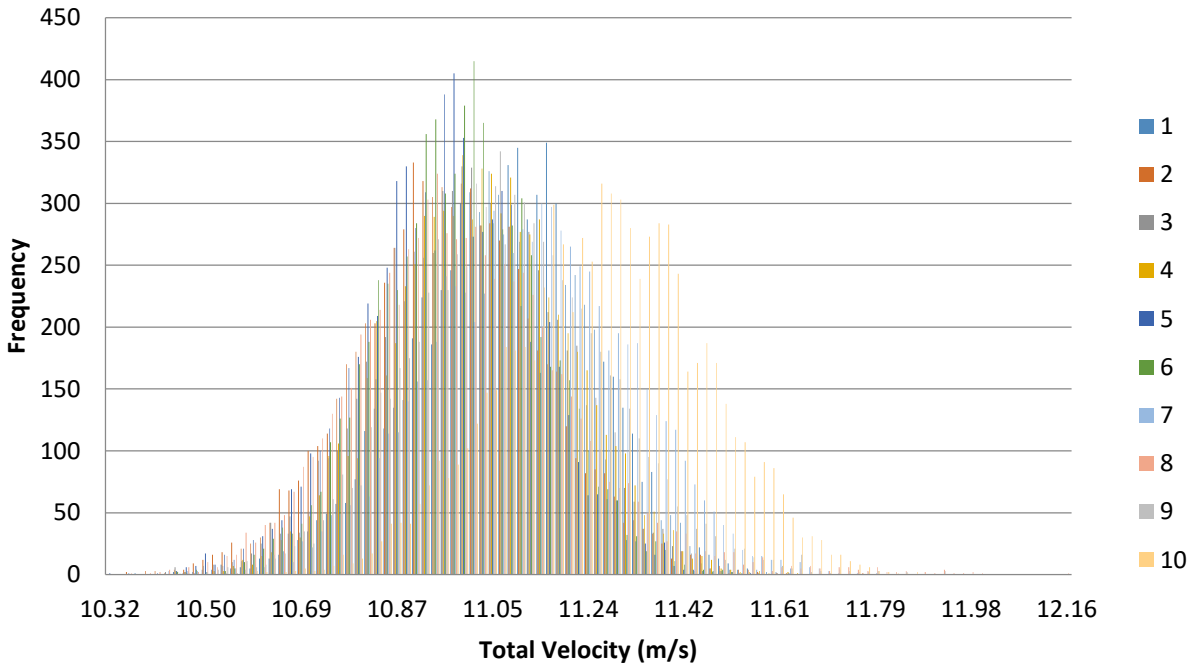


Figure 1. Velocity histogram for each interval (100 bins).

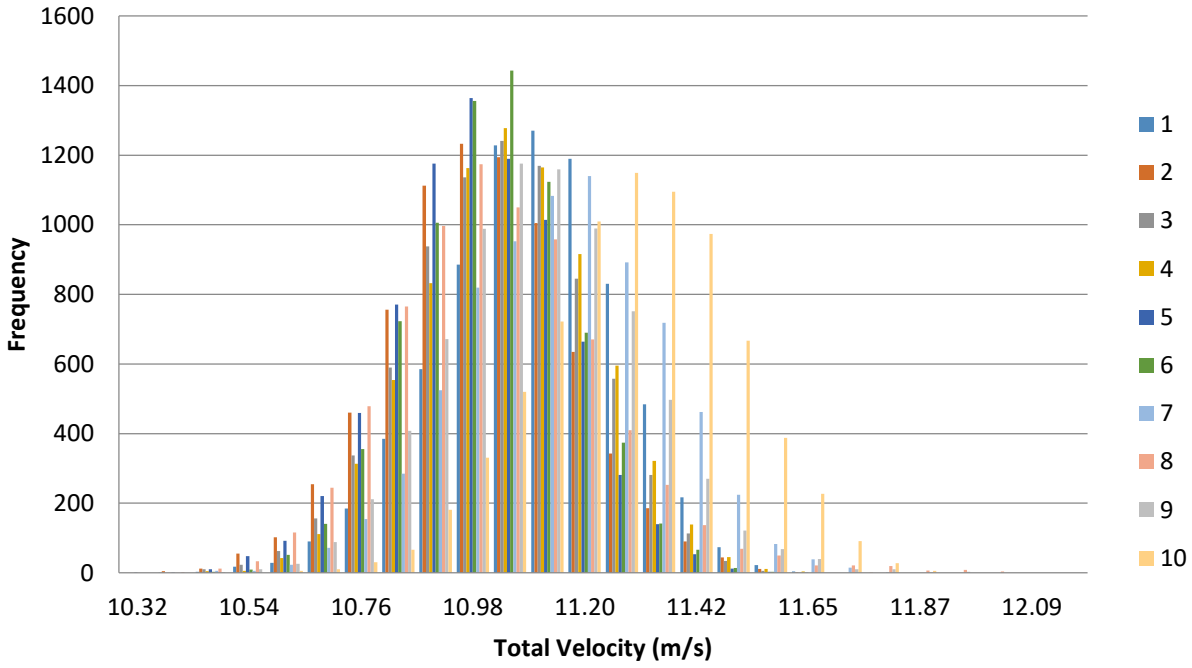
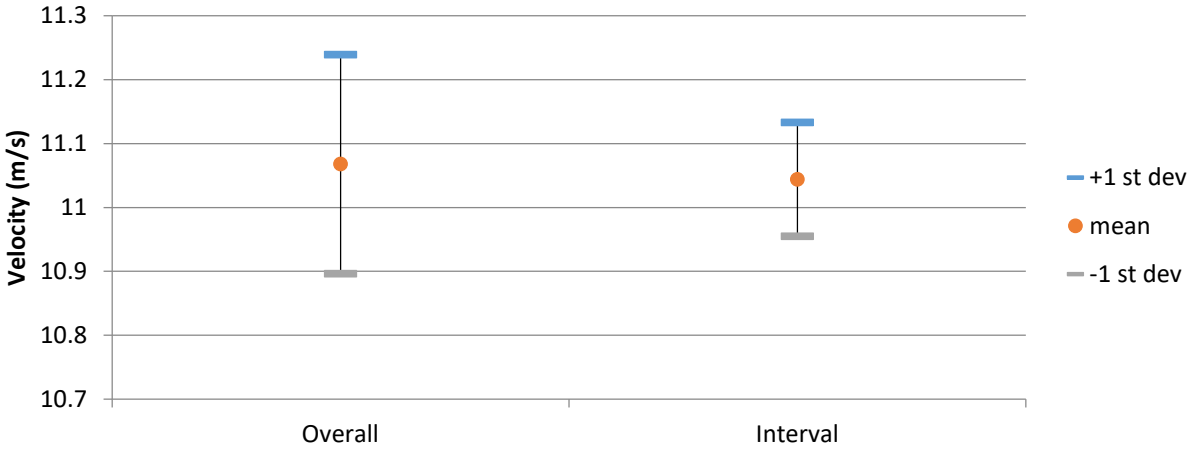
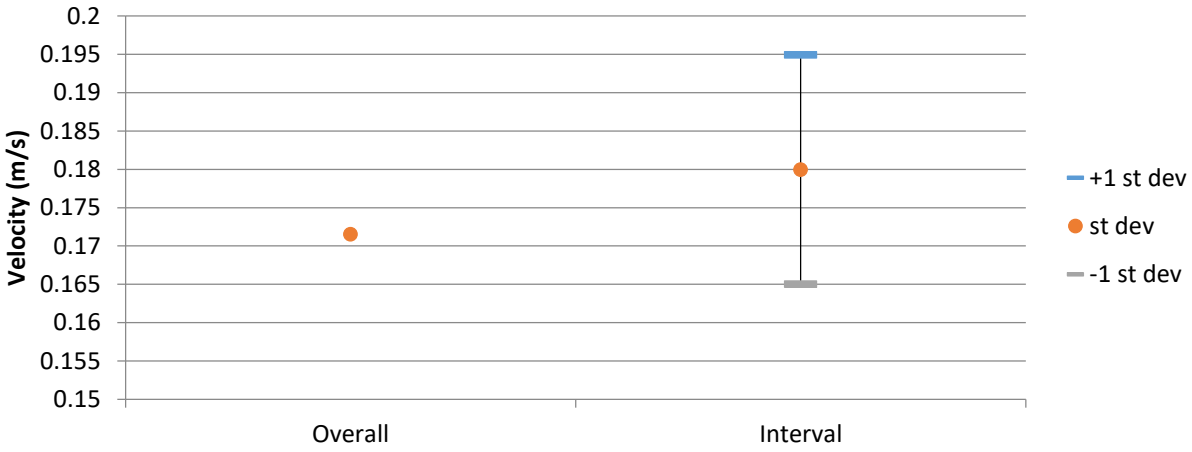


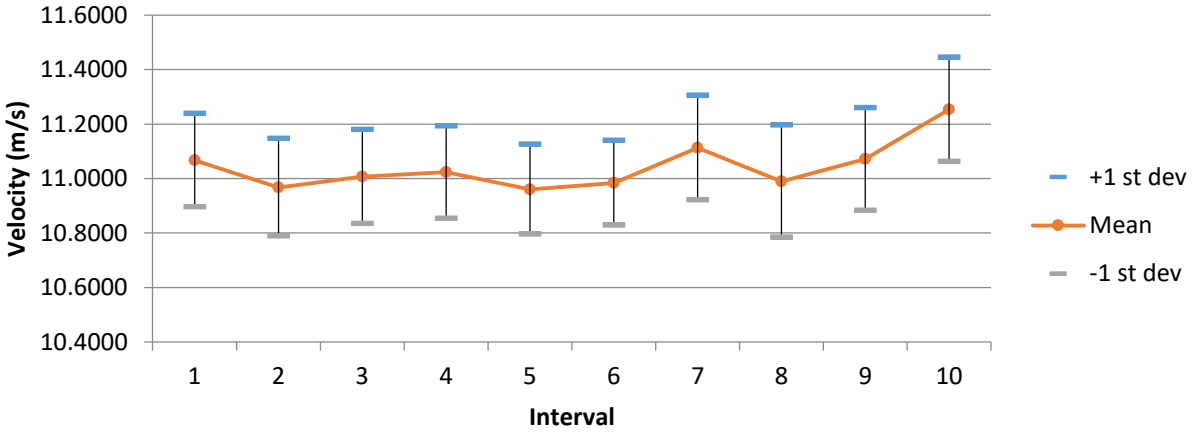
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 111
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E1
First Sample Date: 14-Aug-13
First Sample Time: 08:57:06.953

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	16.6524	11.6650	13.2716	0.3310
u	13.4000	8.5300	11.0921	0.5083
v	10.1000	-1.7300	1.3534	1.4442
w	-5.0300	-9.8700	-6.9814	0.5436

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	13.7901	12.5101	13.1576	0.1755	2.9490
2	14.5396	12.4417	13.3101	0.3925	2.6023
3	15.3103	12.3945	13.2938	0.3459	1.4311
4	14.8077	12.0301	13.2510	0.1896	2.3290
5	14.9835	12.1914	13.2875	0.3095	1.6068
6	15.3378	12.7472	13.2993	0.2137	1.9080
7	14.9029	11.6650	13.0814	0.2496	2.4532
8	15.7921	12.4165	13.2647	0.3254	3.5450
9	16.6524	12.2581	13.6108	0.4825	1.3727
10	14.3348	12.5480	13.1604	0.1806	2.1587
		Average	13.2717	0.2865	2.2356
		St Dev	0.1415	0.1026	0.6569

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	11.1704	0.2402	-6.9263	0.2994	0.3941	0.3139	2.6804	3.5282	2.8097
2	11.6198	0.2558	-6.4515	0.4946	0.5366	0.2751	4.2569	4.6178	2.3671
3	11.5250	0.3318	-6.5809	0.4350	0.4733	0.4322	3.7746	4.1070	3.7497
4	11.1363	-0.4564	-7.1351	0.3561	0.4438	0.4082	3.1973	3.9851	3.6659
5	11.3175	0.9519	-6.8189	0.5148	0.8058	0.5003	4.5489	7.1203	4.4208
6	10.6815	2.6651	-7.4168	0.3107	0.6674	0.4124	2.9085	6.2481	3.8609
7	11.0144	1.6496	-6.7876	0.4192	0.8062	0.4975	3.8063	7.3198	4.5170
8	10.8921	2.2129	-7.1188	0.4104	1.1851	0.5221	3.7678	10.8800	4.7938
9	10.6778	3.5249	-7.5529	0.4031	1.2442	0.5387	3.7753	11.6518	5.0447
10	10.8863	2.1584	-7.0252	0.3342	0.6809	0.3588	3.0701	6.2545	3.2959

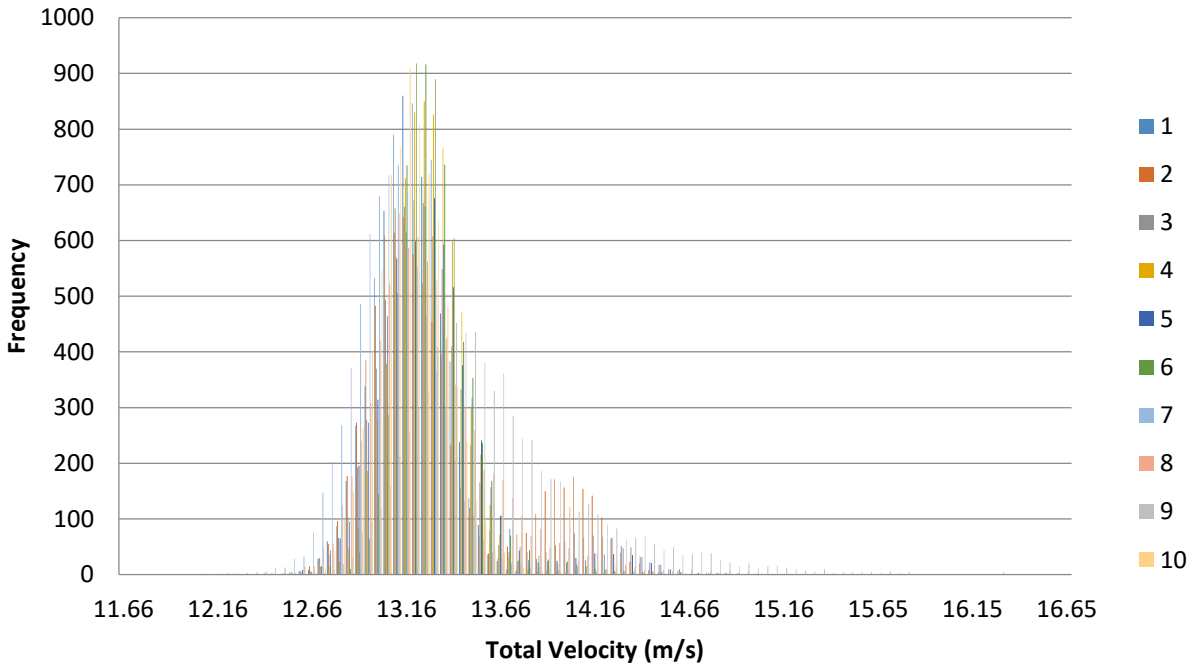


Figure 1. Velocity histogram for each interval (100 bins).

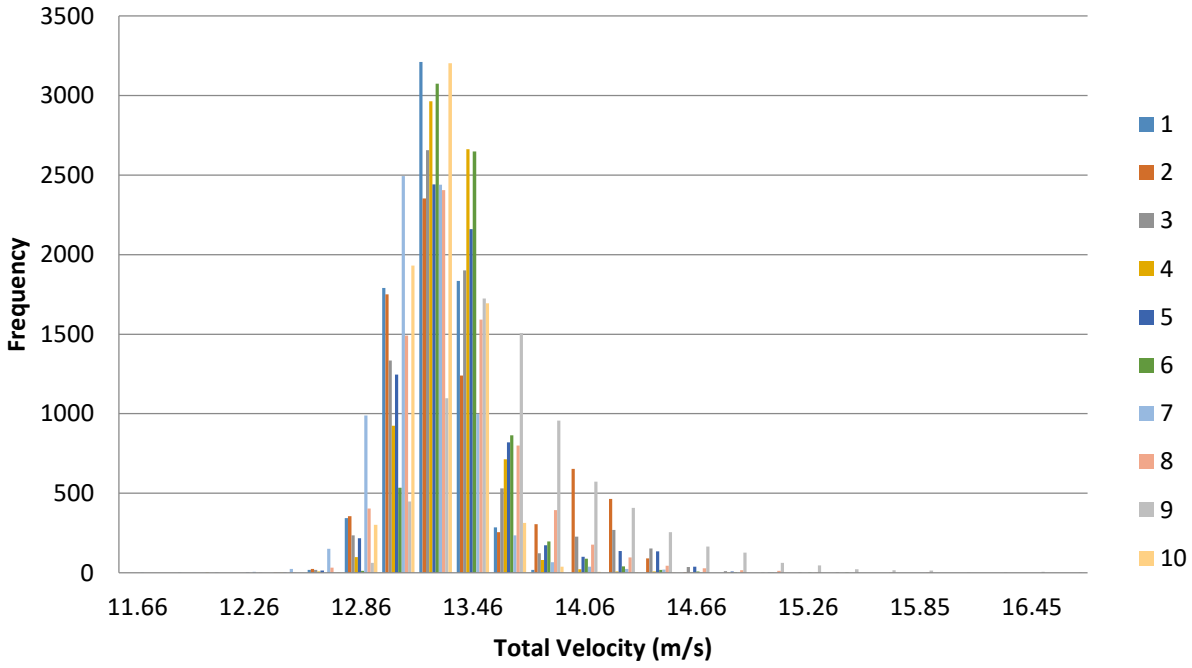
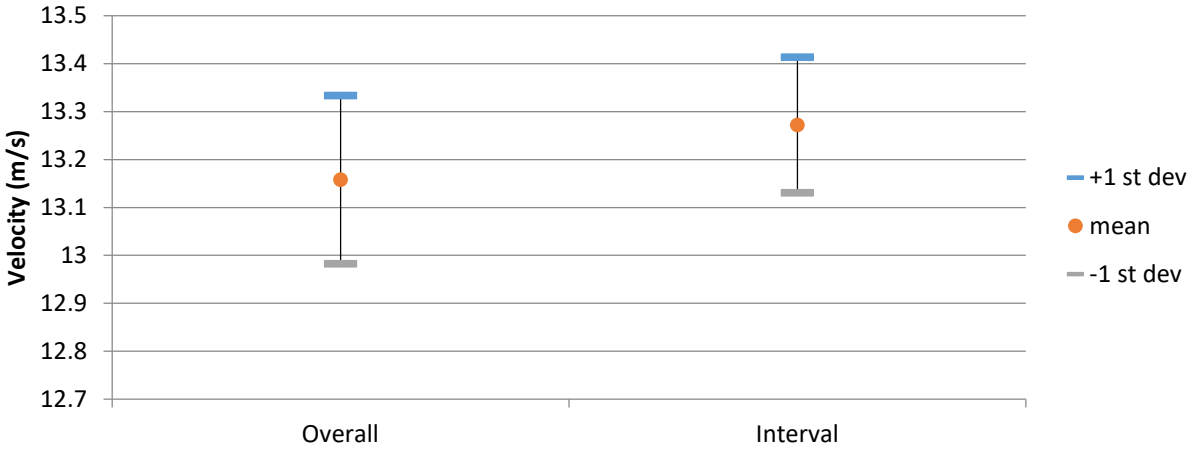
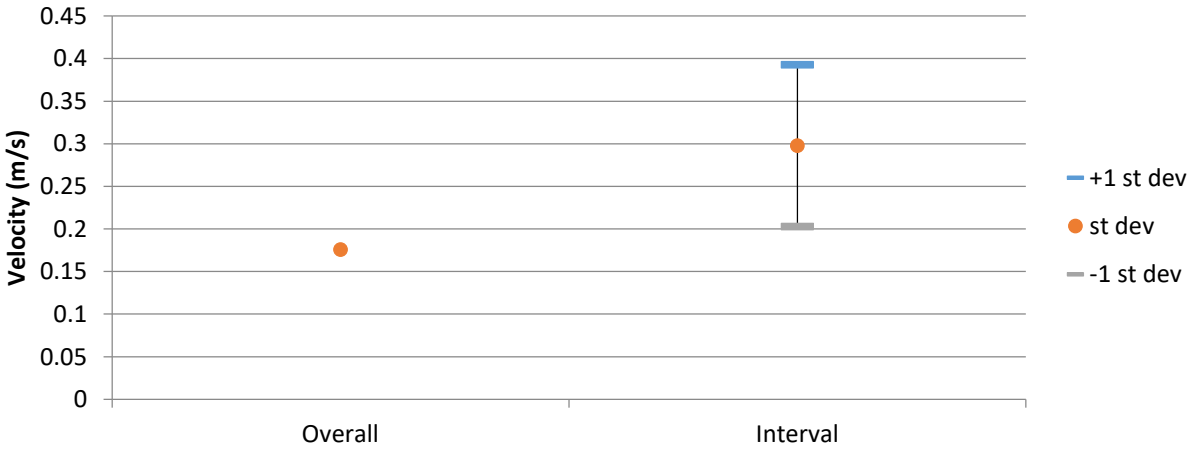


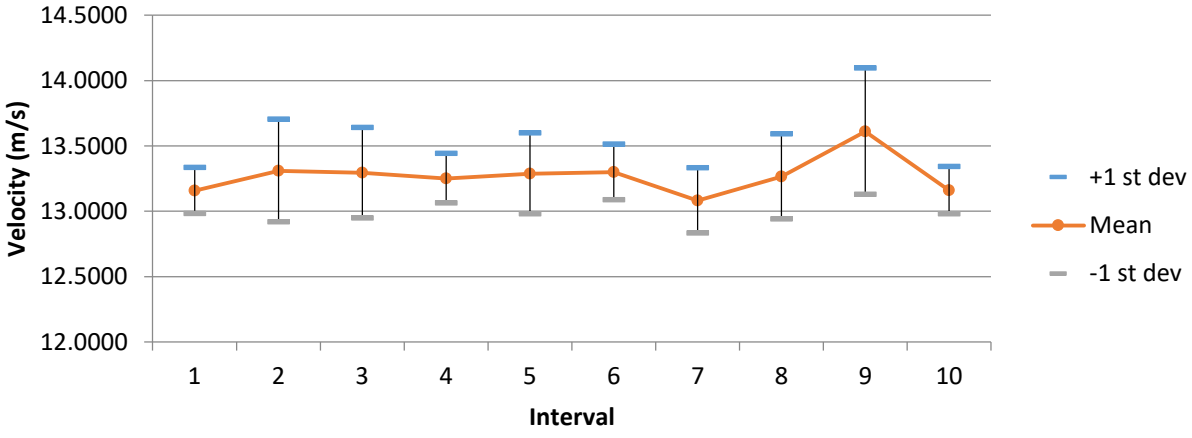
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 112
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E2
First Sample Date: 14-Aug-13
First Sample Time: 08:58:31.046

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	13.4210	11.1238	12.1736	0.3670
u	12.6000	9.2800	11.0048	0.5178
v	2.1800	-2.6000	-0.2353	0.6922
w	-2.6300	-7.0400	-5.1110	0.5484

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	13.2793	11.3034	12.3044	0.4061	2.4174
2	13.4210	11.2607	12.0652	0.2917	2.8106
3	13.2630	11.3431	12.1901	0.3426	3.0442
4	13.1106	11.3865	12.2573	0.3731	3.2022
5	13.1412	11.2533	12.1484	0.3890	2.7138
6	13.0831	11.1238	12.0102	0.3259	2.2203
7	13.0090	11.2162	12.0679	0.2679	3.2140
8	13.2035	11.2923	12.2020	0.3922	3.1147
9	13.2174	11.2927	12.1388	0.3781	2.6357
10	13.1664	11.3084	12.3517	0.3255	2.8687
		Average	12.1736	0.3492	2.8242
		St Dev	0.1097	0.0461	0.3174

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.9992	-0.2513	-5.4581	0.4784	0.6038	0.3670	4.3495	5.4897	3.3367
2	10.8371	-0.5441	-5.1700	0.5335	0.6997	0.6431	4.9231	6.4564	5.9342
3	11.1286	-0.9248	-4.8436	0.4766	0.3626	0.4414	4.2824	3.2580	3.9662
4	11.0502	-0.5730	-5.2501	0.4292	0.2941	0.3325	3.8838	2.6612	3.0092
5	10.9469	-0.3163	-5.2058	0.4835	0.5821	0.3575	4.4169	5.3177	3.2661
6	10.8418	0.4842	-5.0633	0.5296	0.5289	0.6142	4.8846	4.8788	5.6651
7	11.0684	0.6882	-4.7089	0.3980	0.4447	0.4378	3.5962	4.0176	3.9551
8	10.9302	-0.3327	-5.3318	0.5830	0.5993	0.5782	5.3339	5.4832	5.2899
9	10.8995	-0.3522	-5.2552	0.5624	0.5725	0.5555	5.1595	5.2523	5.0966
10	11.3462	-0.2315	-4.8229	0.4643	0.3616	0.5233	4.0925	3.1868	4.6124

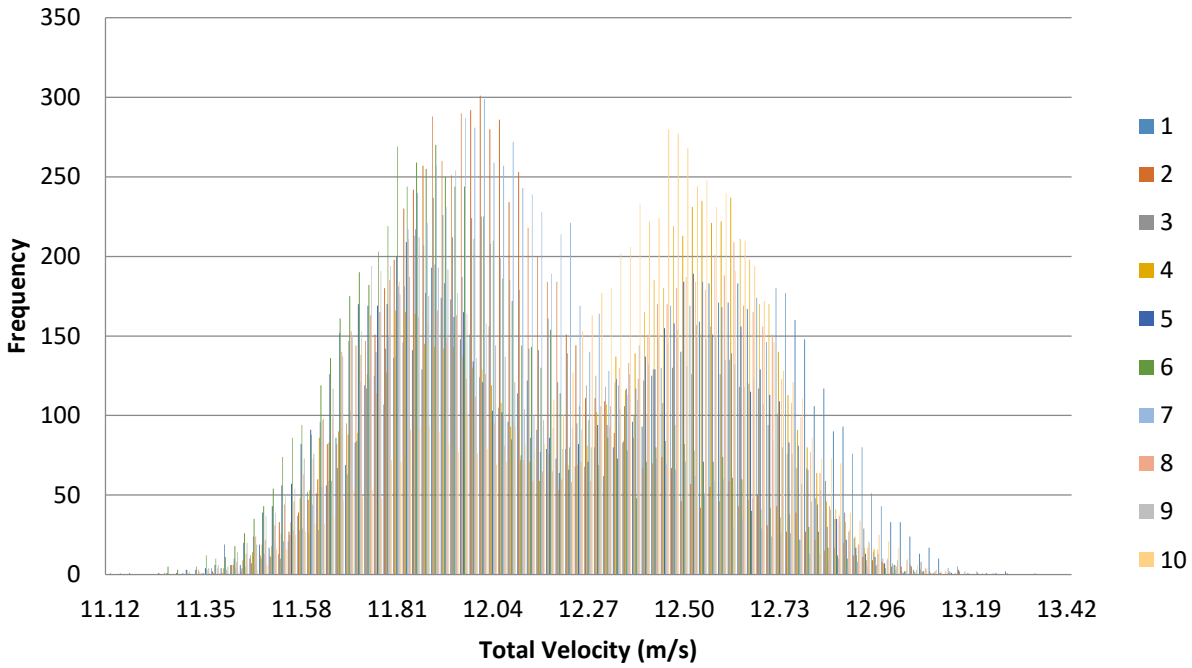


Figure 1. Velocity histogram for each interval (100 bins).

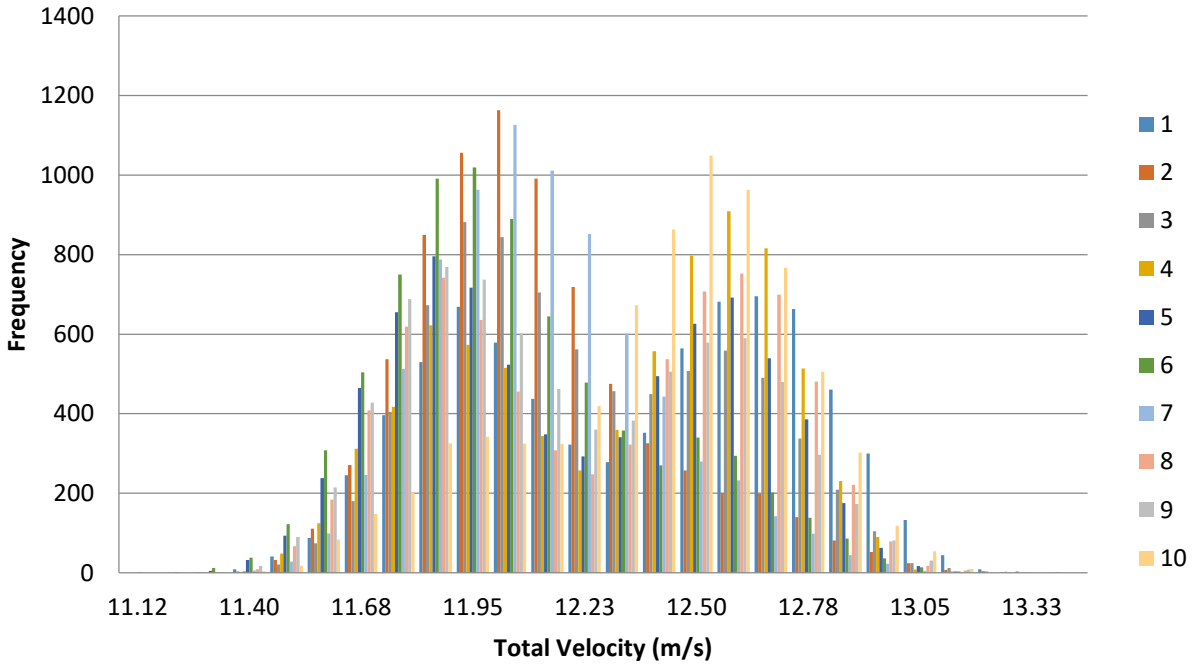
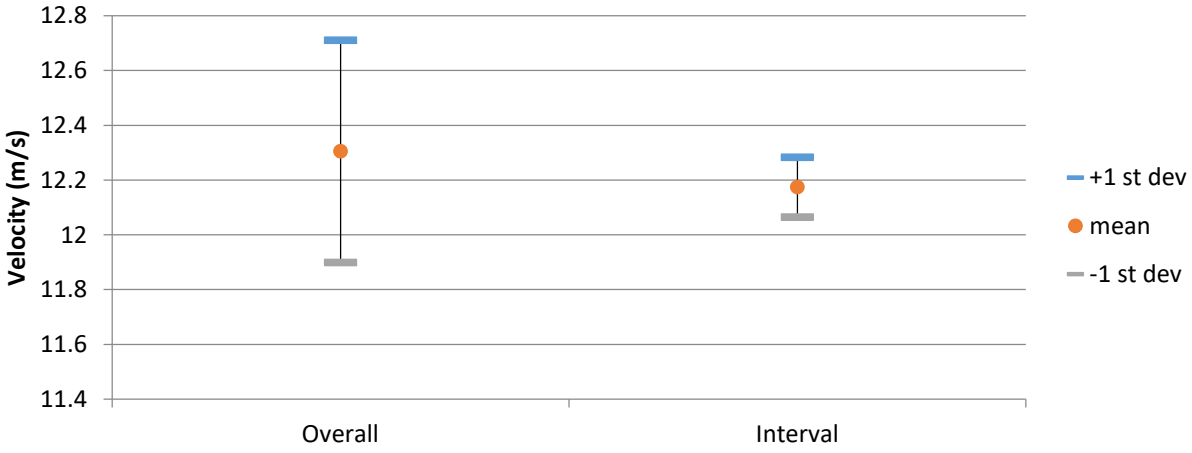
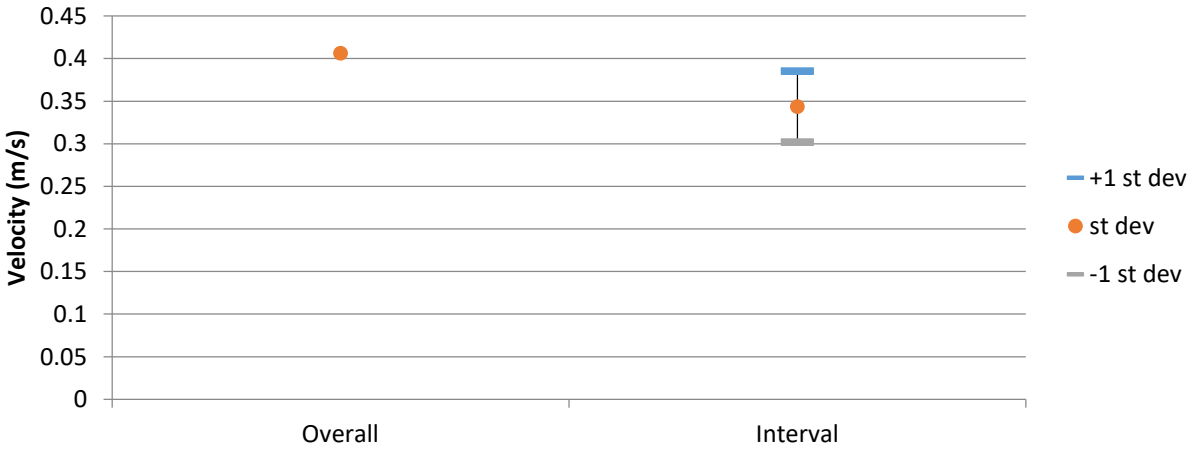


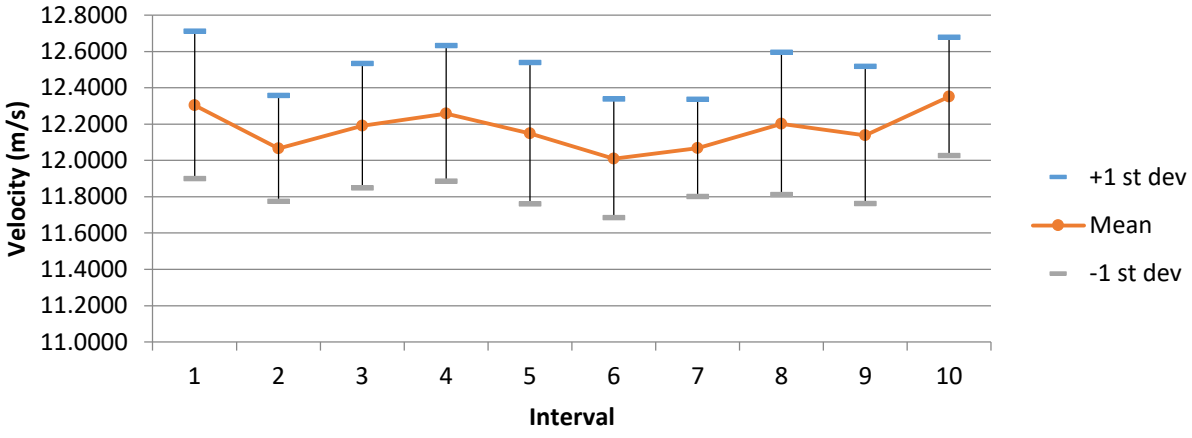
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 113
Blockage Condition: Existing Buildings
Blower Frequency: 50 Hz
Inlet Probe Location: E4
First Sample Date: 14-Aug-13
First Sample Time: 09:00:18.593

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.5840	9.2663	10.4600	0.3048
u	11.5000	8.9000	10.2715	0.3245
v	3.4800	-1.6300	0.8148	0.7180
w	0.2850	-3.9900	-1.5746	0.4850

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.4251	9.2663	10.4169	0.3051	2.9566
2	11.5670	9.2750	10.4000	0.3075	2.9149
3	11.3775	9.3041	10.3551	0.3018	2.8722
4	11.4930	9.4653	10.5584	0.3033	2.8826
5	11.5840	9.4757	10.5402	0.3038	2.7510
6	11.5385	9.5750	10.4995	0.2888	2.7664
7	11.3426	9.3606	10.4078	0.2879	2.8052
8	11.3515	9.5218	10.5079	0.2948	2.9561
9	11.3738	9.2882	10.4174	0.3080	2.6261
10	11.5772	9.5956	10.4966	0.2757	2.8458
		Average	10.4600	0.2977	2.8377
		St Dev	0.0686	0.0106	0.0979

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.2776	0.8696	-1.3301	0.3344	0.4041	0.4185	3.2539	3.9323	4.0724
2	10.2759	0.5471	-1.3705	0.3277	0.4940	0.3614	3.1891	4.8075	3.5166
3	10.2602	0.0545	-1.3421	0.3131	0.3406	0.1739	3.0513	3.3198	1.6950
4	10.2717	1.2159	-1.9774	0.3221	0.5403	0.5276	3.1357	5.2598	5.1366
5	10.3514	1.3096	-1.2813	0.3334	0.5308	0.5364	3.2211	5.1274	5.1818
6	10.2934	1.1108	-1.6849	0.3241	0.3571	0.2519	3.1489	3.4693	2.4469
7	10.2472	0.4292	-1.7003	0.3131	0.3543	0.3167	3.0559	3.4572	3.0907
8	10.2204	1.0688	-1.9323	0.3165	0.8866	0.5325	3.0966	8.6744	5.2104
9	10.2888	0.3505	-1.4090	0.3260	0.6627	0.3210	3.1689	6.4411	3.1202
10	10.2288	1.1920	-1.7180	0.3147	0.9290	0.5401	3.0762	9.0821	5.2806

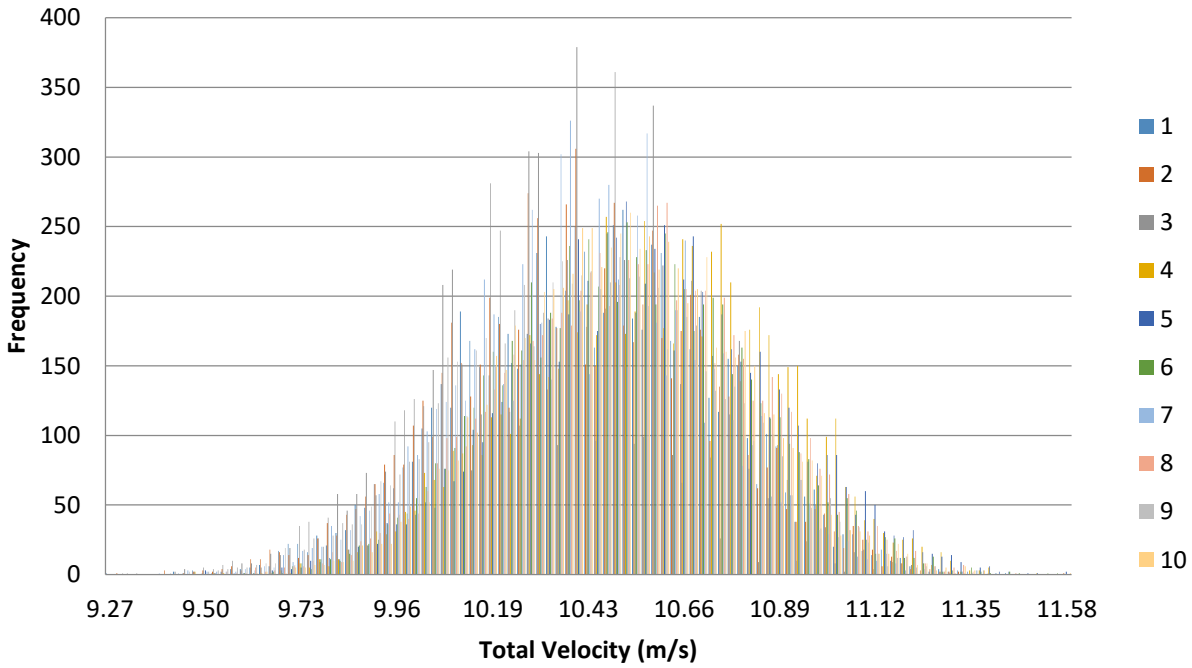


Figure 1. Velocity histogram for each interval (100 bins).

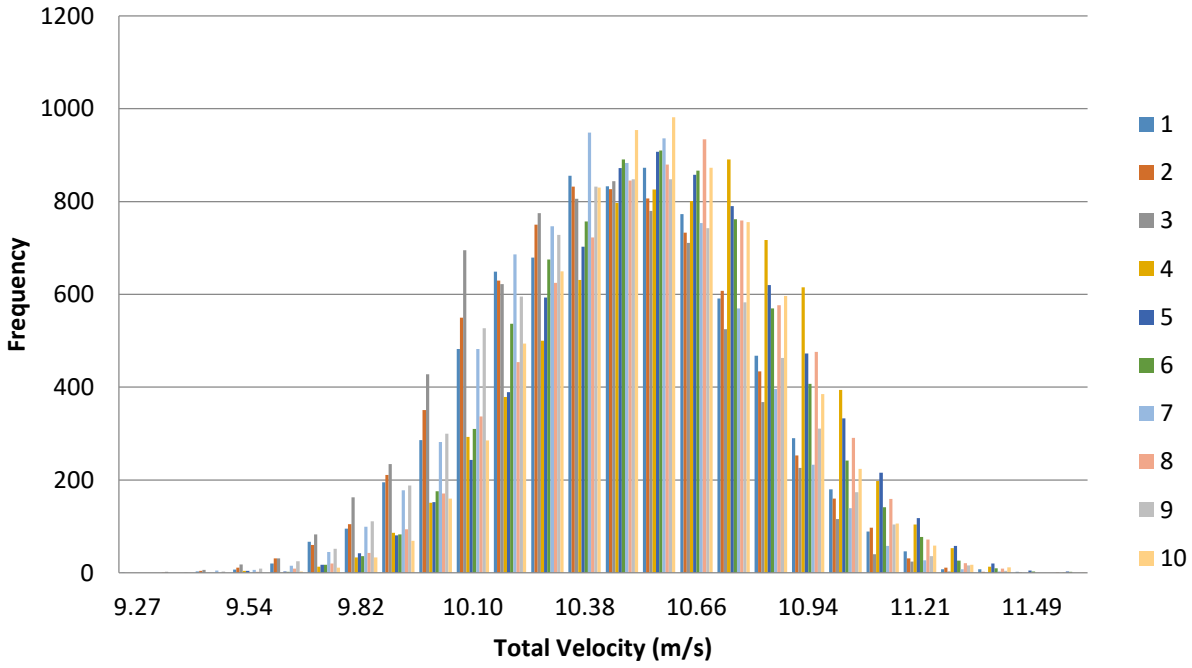
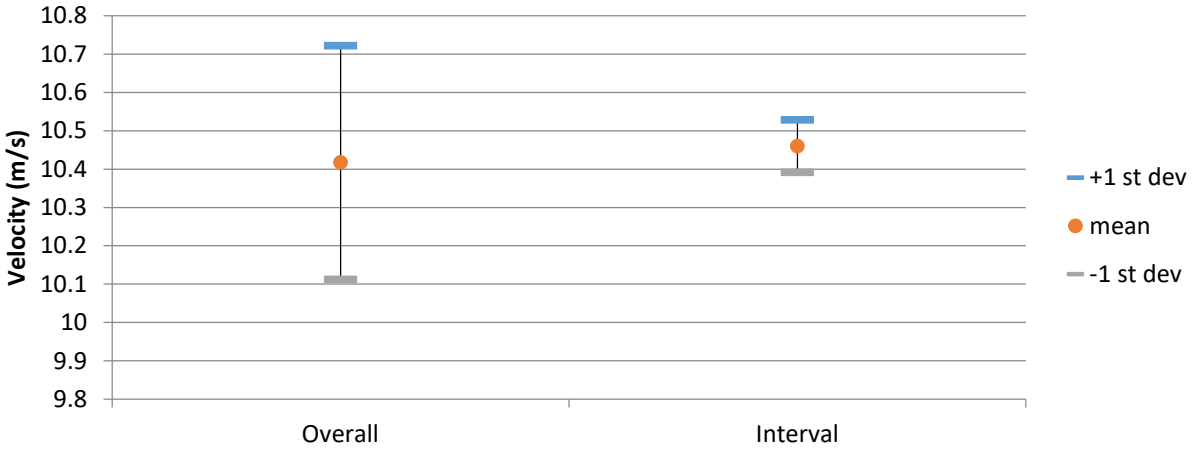
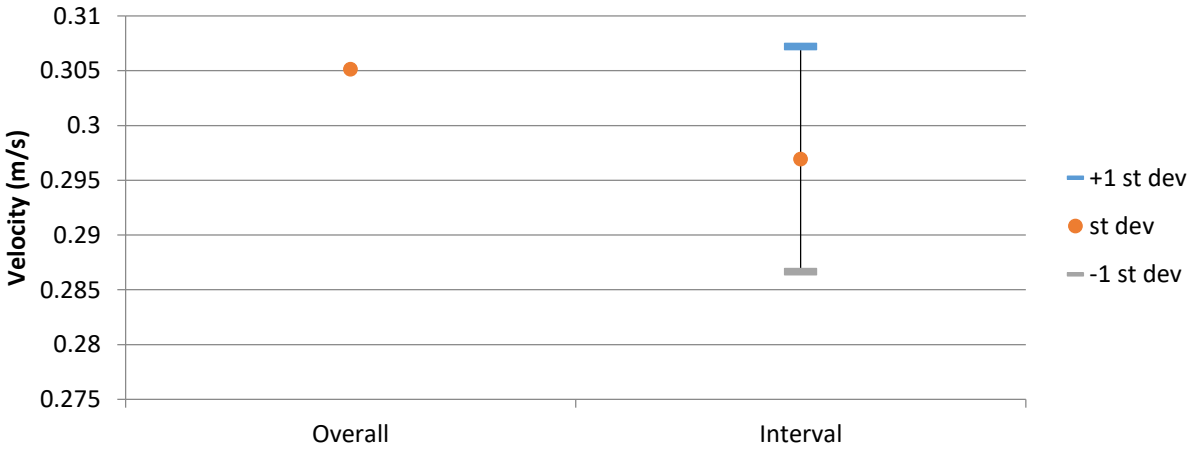


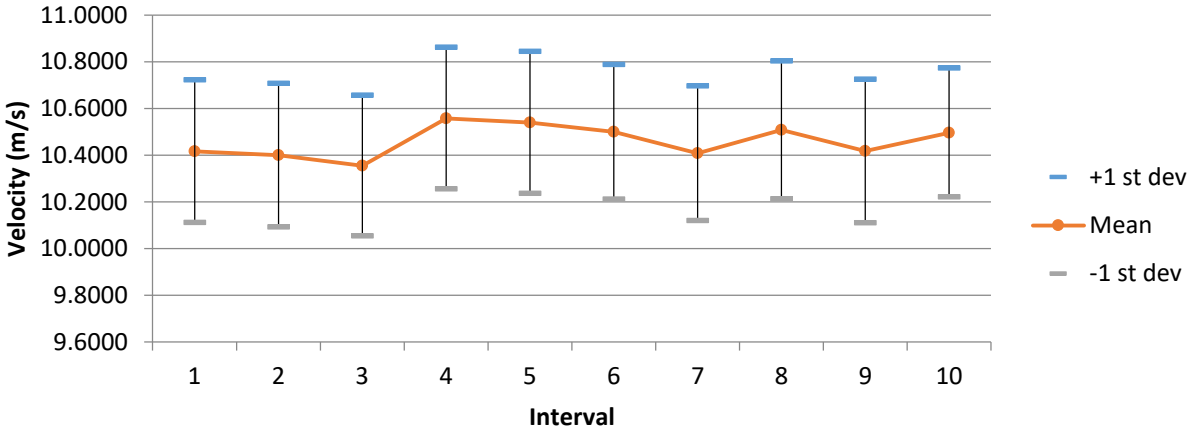
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 115
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E5
First Sample Date: 14-Aug-13
First Sample Time: 09:01:41.562

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.9789	8.8776	10.3299	0.2672
u	11.8000	8.6700	10.1690	0.2579
v	4.0300	-3.4600	0.6557	1.0639
w	1.5800	-4.6100	-1.1139	0.7067

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.1226	9.4252	10.2902	0.2148	1.9646
2	11.5703	9.4543	10.4142	0.2046	3.4734
3	11.9789	9.0705	10.4517	0.3630	2.7164
4	11.8695	8.8776	10.1947	0.2769	2.3279
5	11.3830	9.2734	10.3891	0.2419	2.1425
6	11.4089	9.3528	10.2345	0.2193	2.3176
7	11.8870	9.0908	10.3444	0.2397	2.2200
8	11.4453	9.4560	10.4336	0.2316	2.5455
9	11.3964	9.0861	10.2869	0.2619	2.3720
10	11.1882	9.4080	10.2591	0.2433	2.4173
		Average	10.3298	0.2497	2.4497
		St Dev	0.0896	0.0453	0.3937

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.1605	1.2542	-0.8080	0.2280	0.5290	0.3760	2.2435	5.2066	3.7003
2	10.2384	1.1845	-1.3418	0.2264	0.4412	0.4714	2.2116	4.3088	4.6038
3	10.1616	0.4521	-1.5487	0.3362	1.6154	0.8866	3.3082	15.8968	8.7254
4	10.1001	0.0085	-0.9105	0.2712	0.7820	0.6959	2.6854	7.7422	6.8903
5	10.2038	1.1468	-1.1206	0.2342	0.8818	0.6859	2.2949	8.6417	6.7219
6	10.0983	-0.3727	-1.3207	0.2317	0.7504	0.5637	2.2943	7.4313	5.5820
7	10.2245	0.7042	-1.2163	0.2504	0.4693	0.5136	2.4489	4.5899	5.0229
8	10.2158	1.5752	-1.1077	0.2398	0.5954	0.6569	2.3470	5.8280	6.4299
9	10.1469	1.1769	-0.5986	0.2656	0.6530	0.8301	2.6180	6.4350	8.1805
10	10.1400	-0.5724	-1.1659	0.2321	0.5077	0.7009	2.2893	5.0066	6.9123

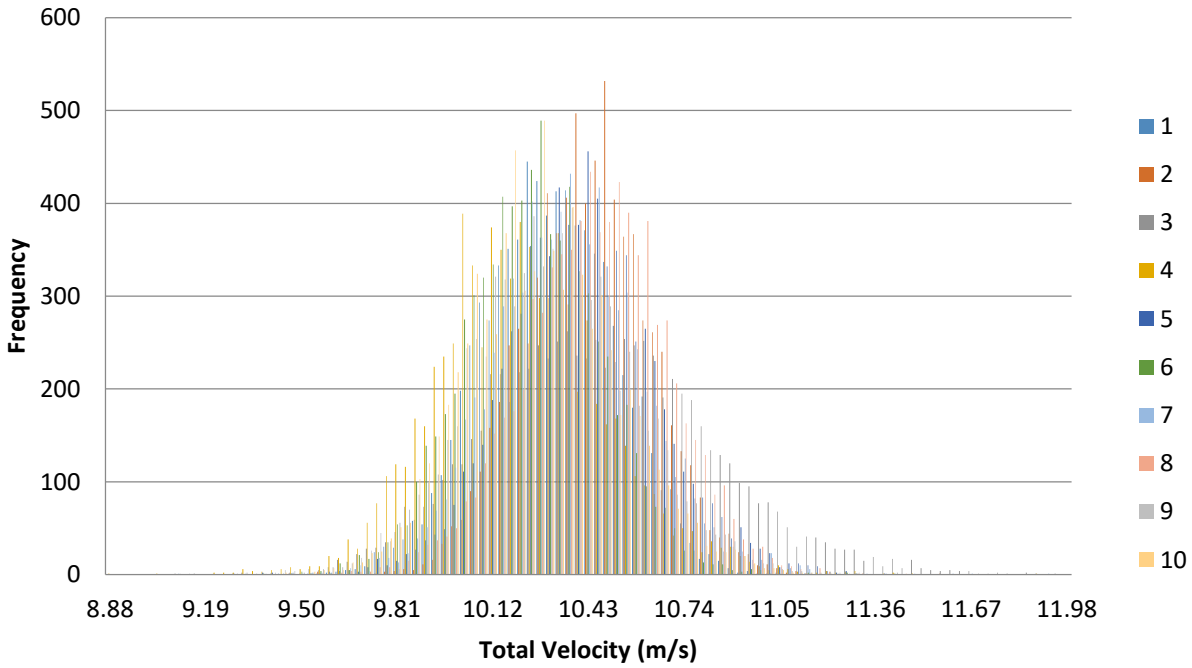


Figure 1. Velocity histogram for each interval (100 bins).

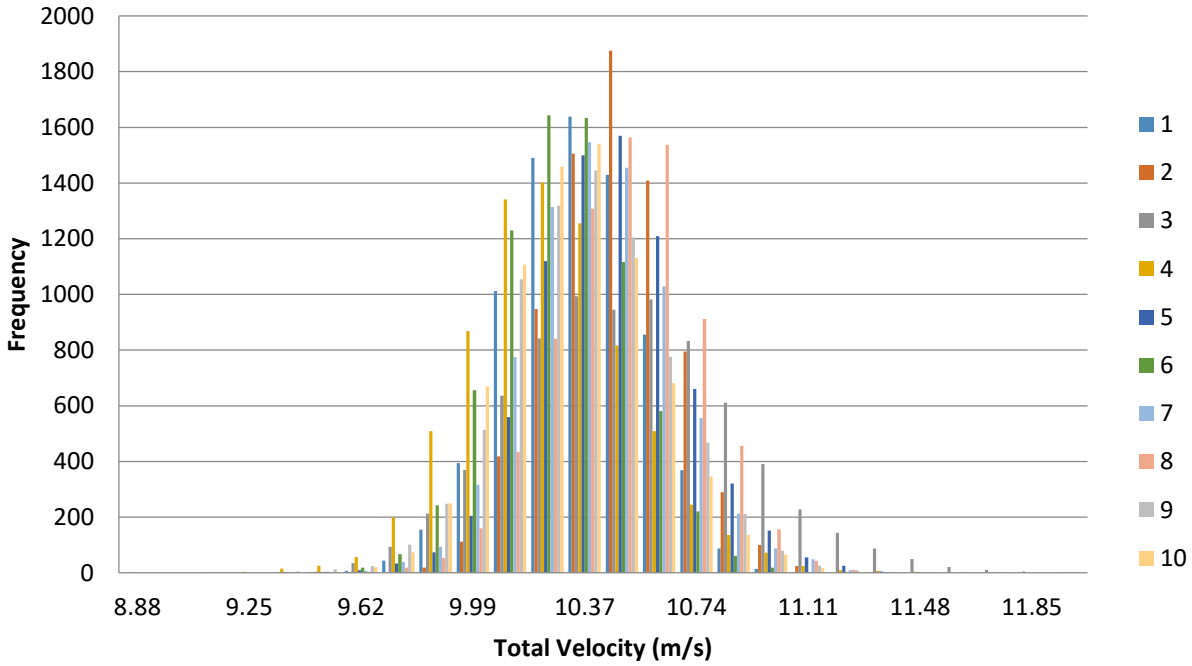
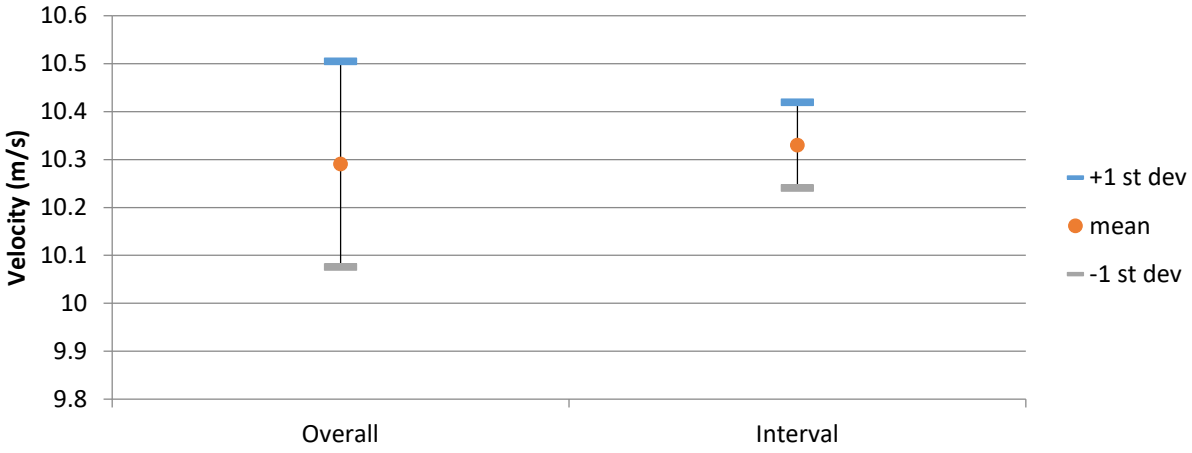
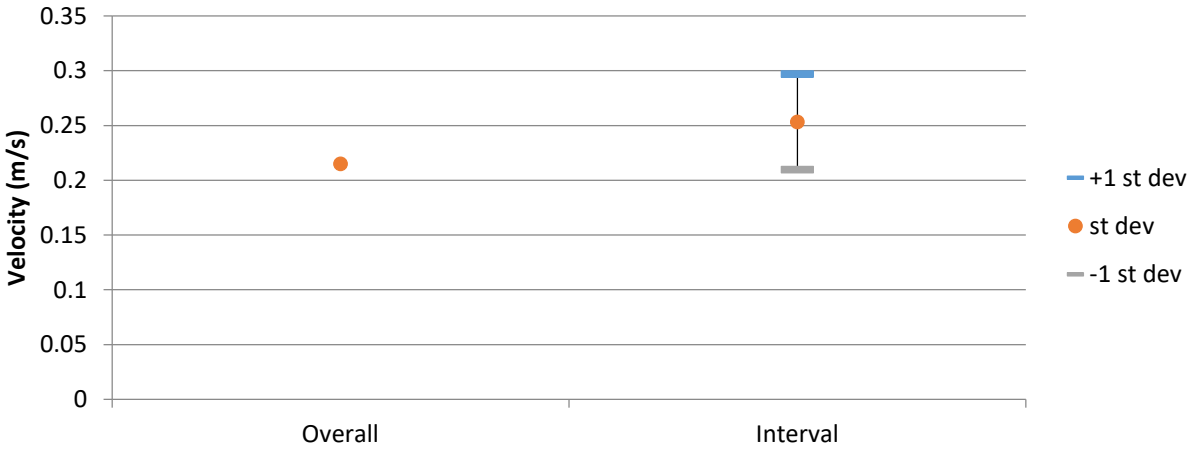


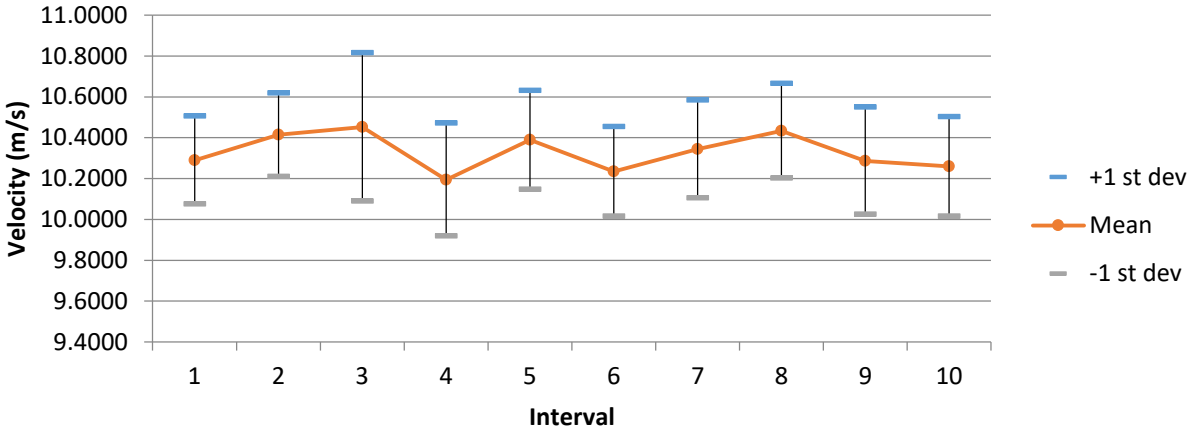
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 116
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: D5
First Sample Date: 14-Aug-13
First Sample Time: 09:04:26.000

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.0432	8.2777	10.1044	0.3054
u	11.9000	8.1000	9.9188	0.3588
v	2.7600	-4.4700	-1.1748	1.0956
w	3.0600	-3.9700	-0.7221	0.7619

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.4866	9.1959	10.0405	0.2425	2.5882
2	11.0457	9.0628	10.0869	0.2611	2.4483
3	10.9629	9.1569	10.0224	0.2454	2.3954
4	11.0218	9.1985	10.1653	0.2435	3.0090
5	11.9096	8.5354	10.1049	0.3041	3.6724
6	12.0432	8.2777	10.1365	0.3722	3.5743
7	11.6539	8.7714	10.0636	0.3597	2.8471
8	11.2433	8.9557	9.9427	0.2831	2.8449
9	11.4422	9.2312	10.3042	0.2931	2.6185
10	11.1746	9.0806	10.1772	0.2665	2.8415
		Average	10.1044	0.2871	2.8840
		St Dev	0.0994	0.0467	0.4129

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.7696	-2.0867	-0.5294	0.2690	0.6220	0.5757	2.7538	6.3664	5.8929
2	9.9818	-0.8288	-0.7163	0.2826	0.8061	0.4988	2.8307	8.0760	4.9969
3	9.8734	-0.9989	-1.0909	0.2598	0.6045	0.6358	2.6315	6.1226	6.4395
4	10.0766	-0.4528	-0.7128	0.2712	0.8457	0.5937	2.6917	8.3929	5.8914
5	10.0059	-0.7350	-0.6794	0.3086	0.6750	0.7282	3.0838	6.7463	7.2774
6	9.8372	-1.6297	-0.5584	0.4518	1.3175	1.1001	4.5930	13.3927	11.1829
7	9.6639	-2.4214	-0.5845	0.4148	0.6323	1.1128	4.2924	6.5427	11.5149
8	9.7450	-1.3880	-0.5765	0.3317	1.0492	0.7093	3.4040	10.7667	7.2787
9	10.2112	0.1438	-0.8953	0.2914	0.8497	0.6036	2.8542	8.3213	5.9113
10	10.0230	-1.3501	-0.8764	0.2620	0.4472	0.5714	2.6144	4.4620	5.7011

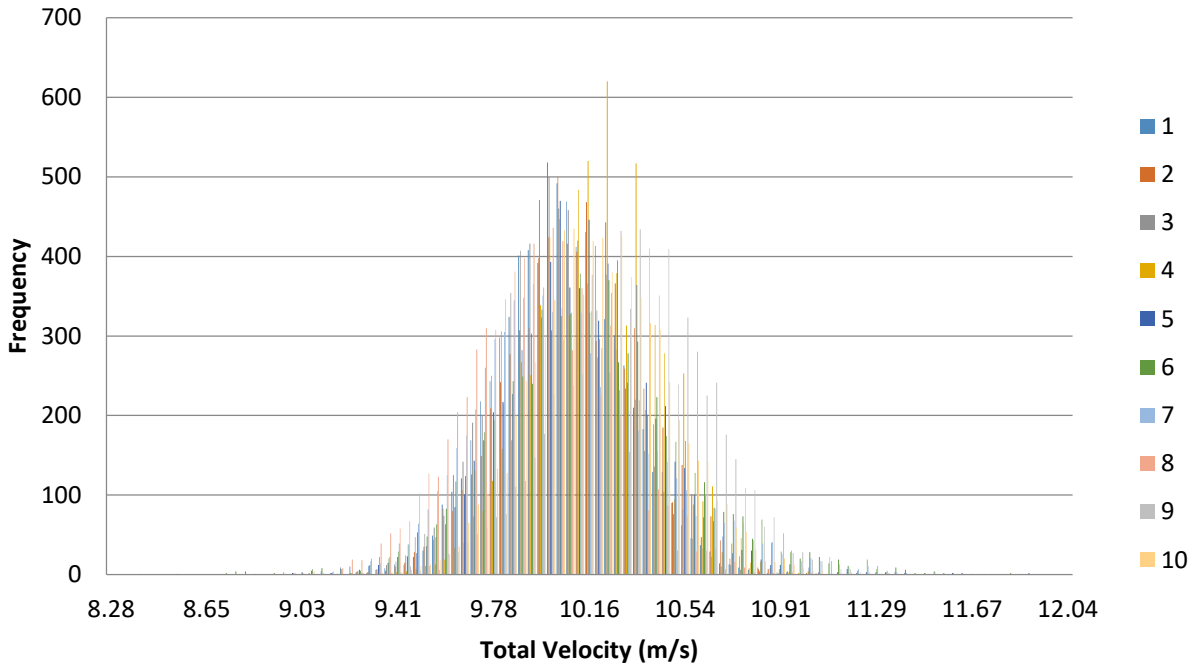


Figure 1. Velocity histogram for each interval (100 bins).

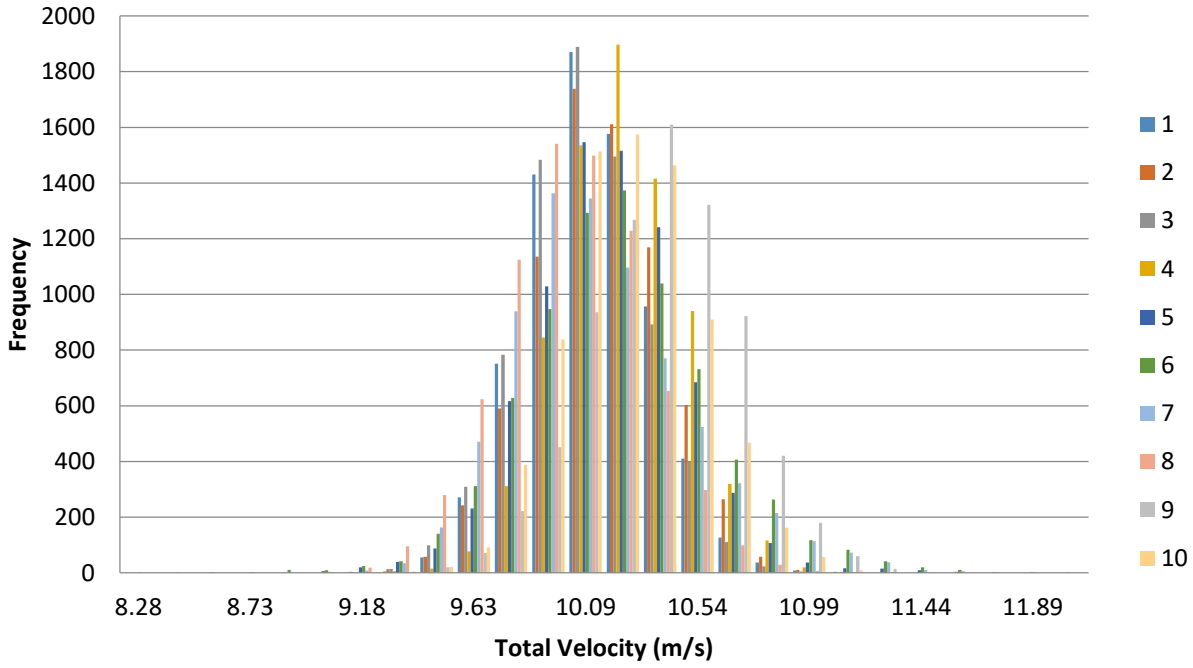
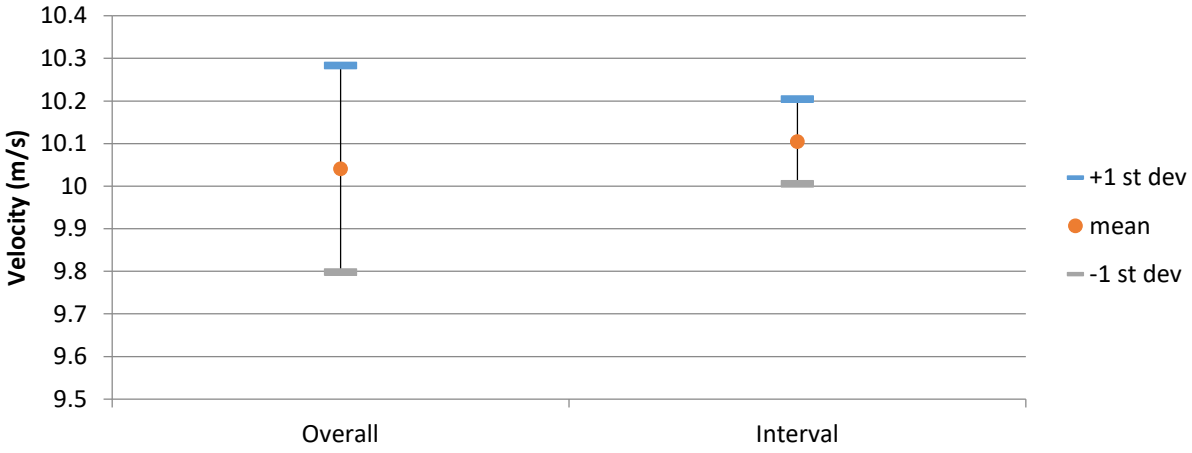
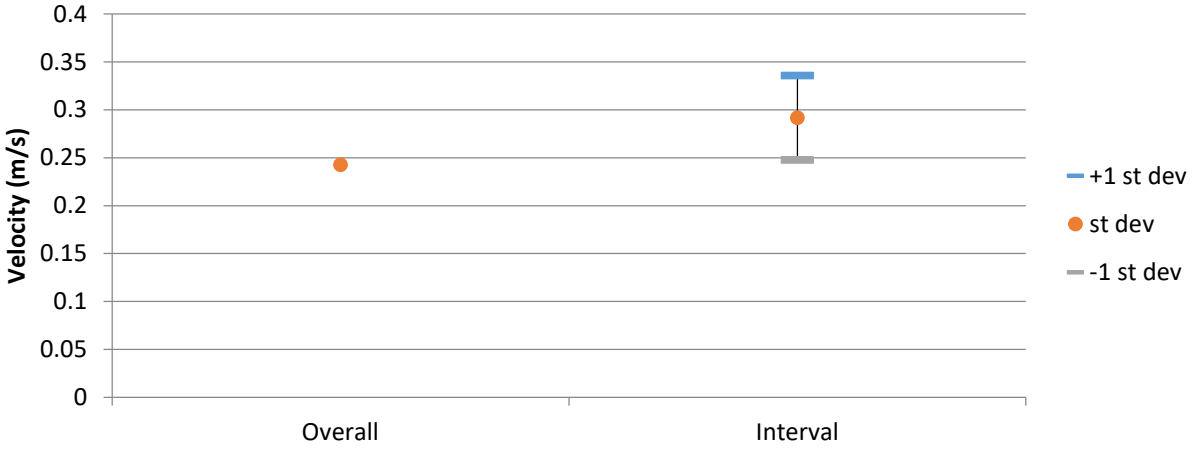


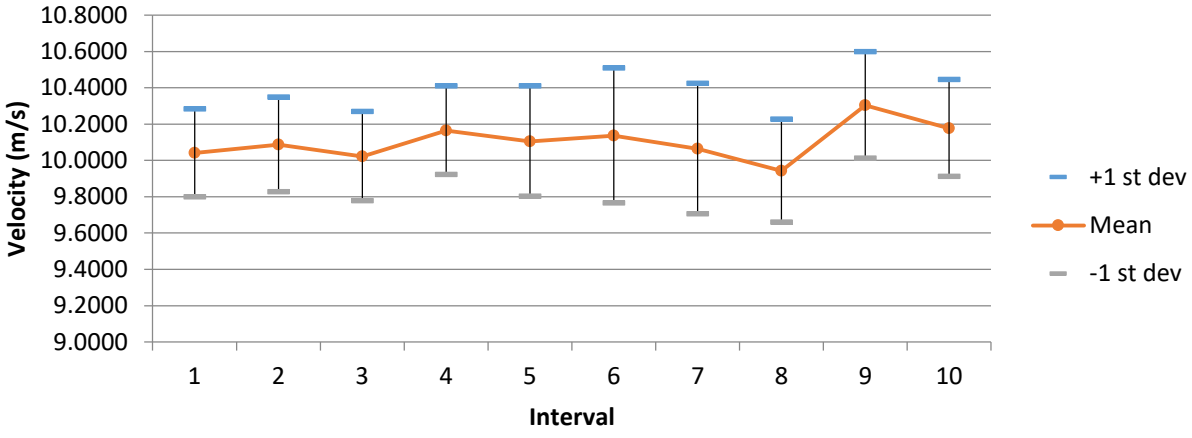
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 117
Blockage Condition: Existing buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: D4
First Sample Date: 14-Aug-13
First Sample Time: 09:06:05.109

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.1349	7.6590	10.1894	0.3903
u	11.9000	6.6000	9.9224	0.4259
v	2.4900	-5.9800	-1.5148	1.1393
w	3.7500	-3.7600	-0.6896	1.1282

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.3572	8.6689	10.0518	0.3561	3.4997
2	11.4871	8.5087	10.1110	0.3539	3.1903
3	11.3795	8.7428	10.1012	0.3223	3.1925
4	11.3502	8.9550	10.0998	0.3224	3.8386
5	11.9511	9.1487	10.4072	0.3995	3.8192
6	12.1349	9.0577	10.3112	0.3938	3.5781
7	11.7098	9.0272	10.2917	0.3682	4.4798
8	12.1284	8.0832	10.1418	0.4543	4.2368
9	12.0247	7.6590	10.1964	0.4320	3.1770
10	11.3070	8.7677	10.1824	0.3235	3.6568
		Average	10.1894	0.3726	3.6669
		St Dev	0.1135	0.0465	0.4203

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.7306	-2.2966	-0.2862	0.3412	0.6990	0.7218	3.5064	7.1839	7.4178
2	9.7356	-2.4408	-0.8338	0.3429	0.5715	0.6923	3.5224	5.8704	7.1111
3	9.9253	-1.3311	-0.9568	0.3281	0.4990	0.7631	3.3057	5.0273	7.6880
4	9.9415	-1.3981	-0.0932	0.3226	0.5345	0.9606	3.2447	5.3765	9.6623
5	10.3116	-0.5274	-0.6248	0.3990	0.5455	1.0071	3.8699	5.2897	9.7669
6	10.0118	-1.2947	-1.6984	0.4387	1.0228	0.6637	4.3822	10.2155	6.6291
7	10.1258	-0.5246	-0.6579	0.4191	1.1910	1.1047	4.1390	11.7616	10.9093
8	9.8927	-1.3864	-0.2602	0.4505	1.4315	0.9774	4.5537	14.4705	9.8799
9	9.7451	-2.2829	0.2283	0.4362	1.1427	1.5575	4.4760	11.7262	15.9824
10	9.8041	-1.6659	-1.7132	0.3587	1.1682	0.6794	3.6583	11.9154	6.9294

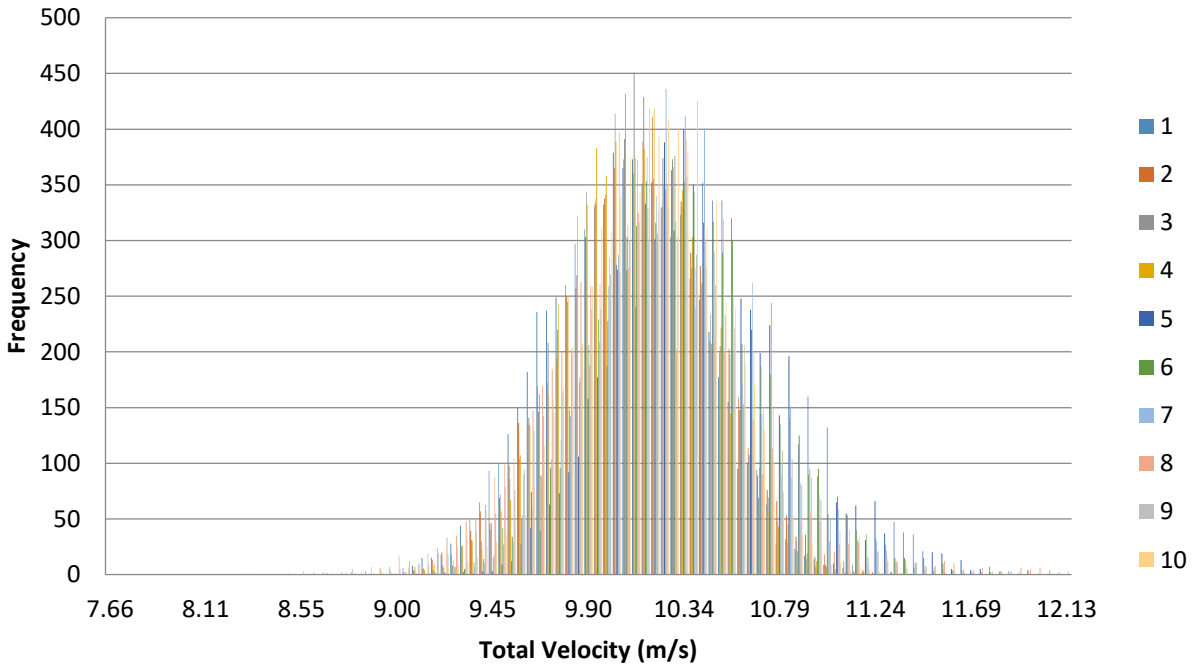


Figure 1. Velocity histogram for each interval (100 bins).

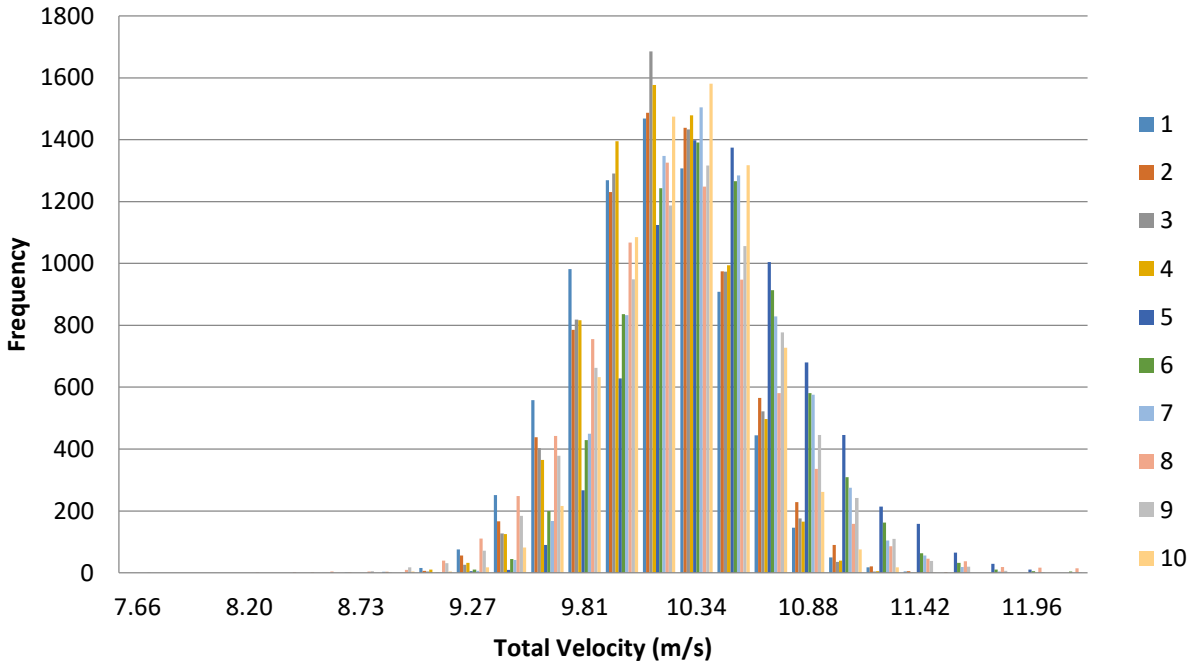
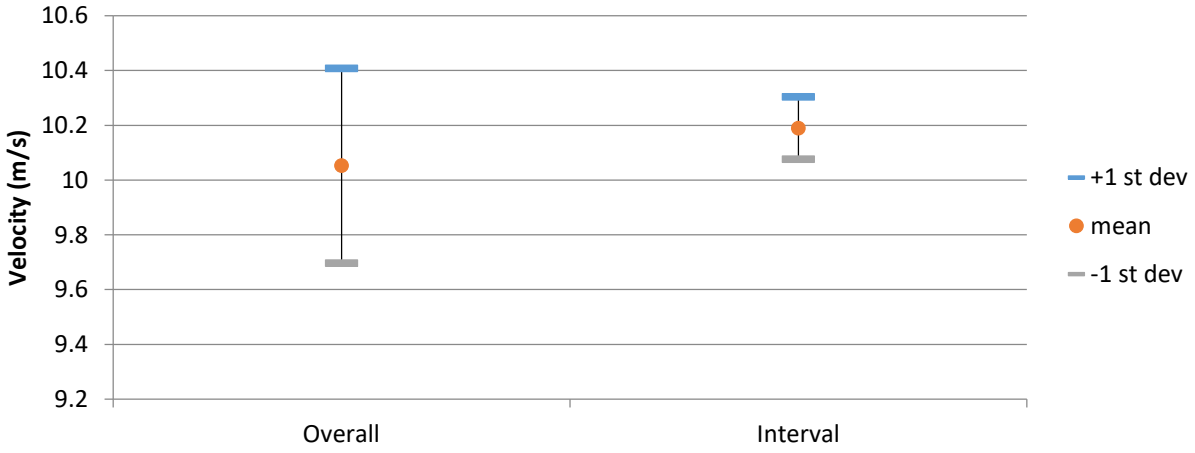
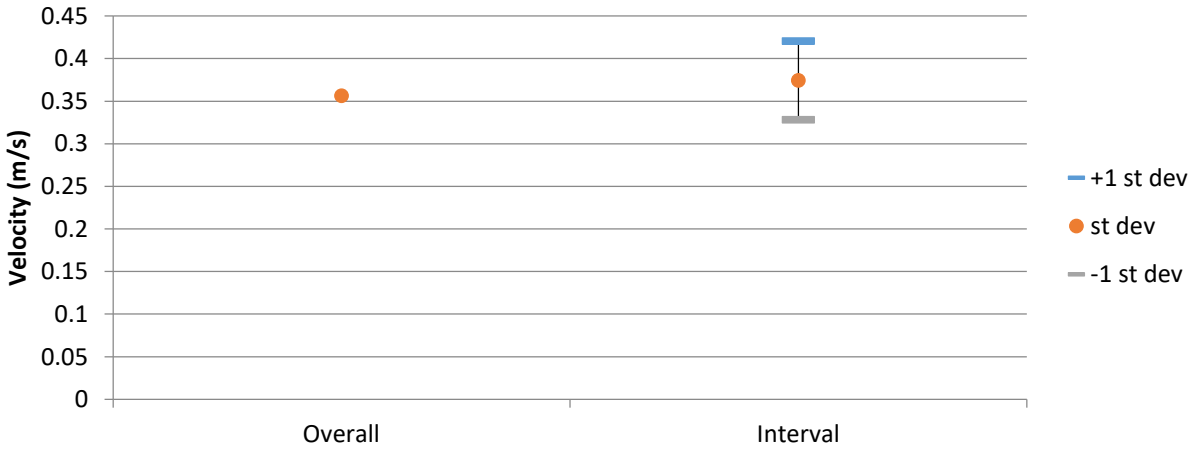


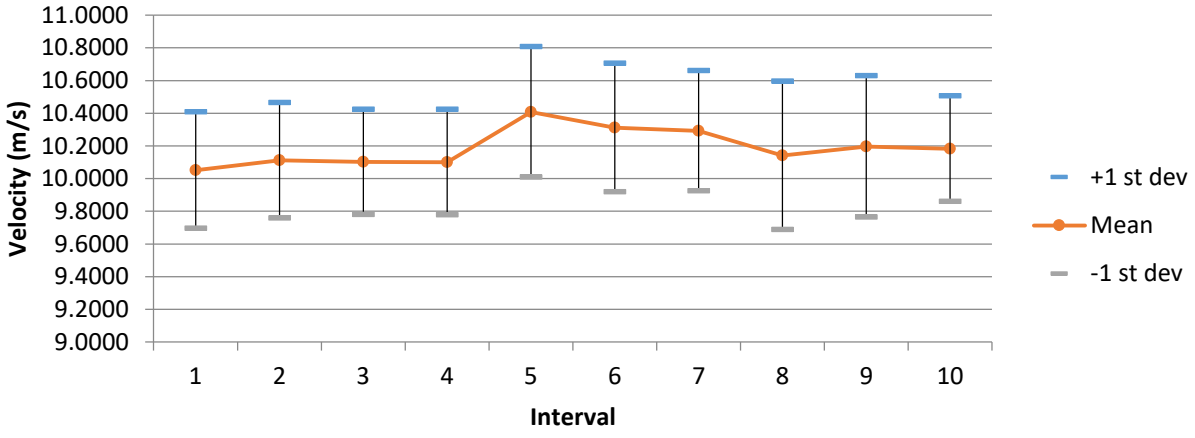
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 118
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: D3
First Sample Date: 14-Aug-13
First Sample Time: 09:07:28.437

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.8725	9.3172	10.8252	0.3299
u	11.7000	8.6100	10.0183	0.3130
v	0.5860	-6.2100	-2.9853	0.9879
w	2.5300	-5.6600	-2.3463	1.1982

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.6622	9.7647	10.7028	0.2506	2.8150
2	12.1085	9.3172	10.6635	0.3002	3.0161
3	12.7676	9.6048	10.9469	0.3302	2.1333
4	11.8612	9.9639	10.8545	0.2316	1.8156
5	11.4769	9.9100	10.8206	0.1965	1.7966
6	11.3571	10.0848	10.7297	0.1928	2.1174
7	11.3573	9.7593	10.6566	0.2256	3.3997
8	12.5169	9.9220	11.1193	0.3780	4.1502
9	12.8725	9.8965	10.9901	0.4561	2.6901
10	11.9970	9.8585	10.7681	0.2897	2.6338
		Average	10.8252	0.2851	2.6568
		St Dev	0.1532	0.0844	0.7036

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.0197	-1.5045	-2.6681	0.4118	0.8771	1.9744	4.1101	8.7534	19.7049
2	10.2282	-2.5740	-0.4994	0.2915	0.6537	1.3409	2.8499	6.3912	13.1094
3	9.9176	-3.0935	-3.2051	0.3321	0.9549	0.8485	3.3482	9.6281	8.5556
4	9.9236	-3.3795	-2.7427	0.2319	0.3700	0.5102	2.3369	3.7283	5.1416
5	10.0304	-2.7590	-2.9394	0.2311	0.3886	0.2434	2.3037	3.8745	2.4261
6	10.1297	-2.5826	-2.3736	0.1718	0.2598	0.3924	1.6956	2.5648	3.8734
7	10.0749	-2.7430	-1.9859	0.2051	0.3390	0.6957	2.0355	3.3647	6.9057
8	10.0553	-4.0344	-2.2357	0.2494	1.0241	0.5361	2.4800	10.1845	5.3311
9	9.8517	-4.1386	-2.3059	0.3352	0.7193	0.9272	3.4022	7.3011	9.4116
10	9.9524	-3.0443	-2.5059	0.3867	0.6158	0.9536	3.8852	6.1872	9.5813

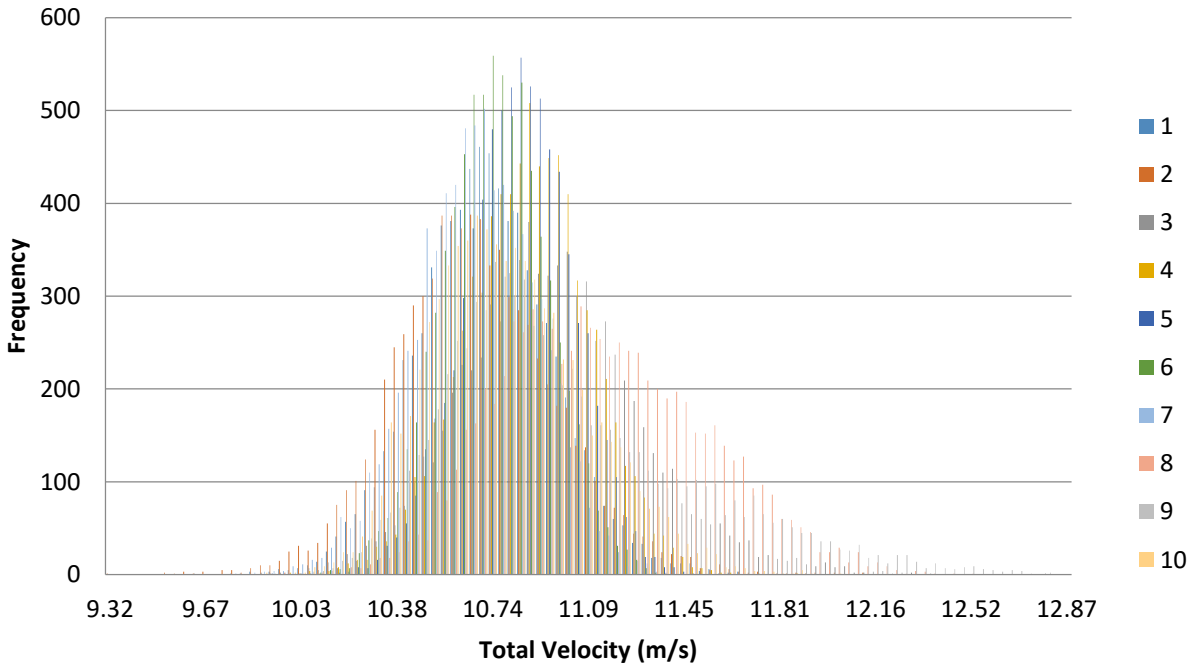


Figure 1. Velocity histogram for each interval (100 bins).

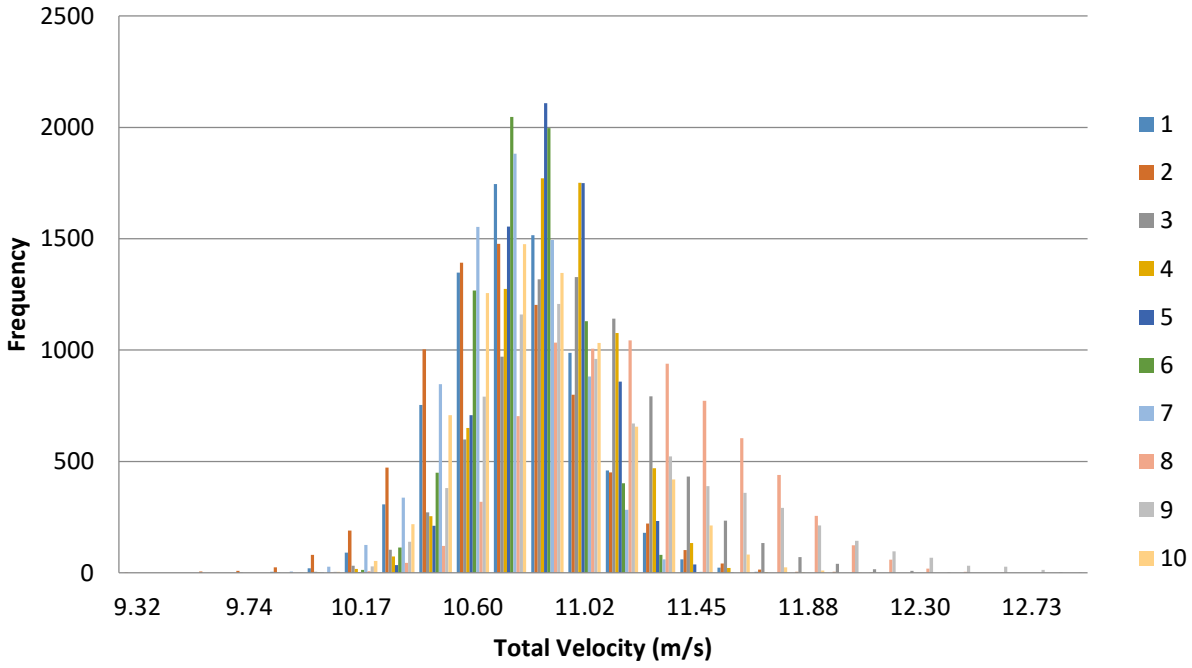
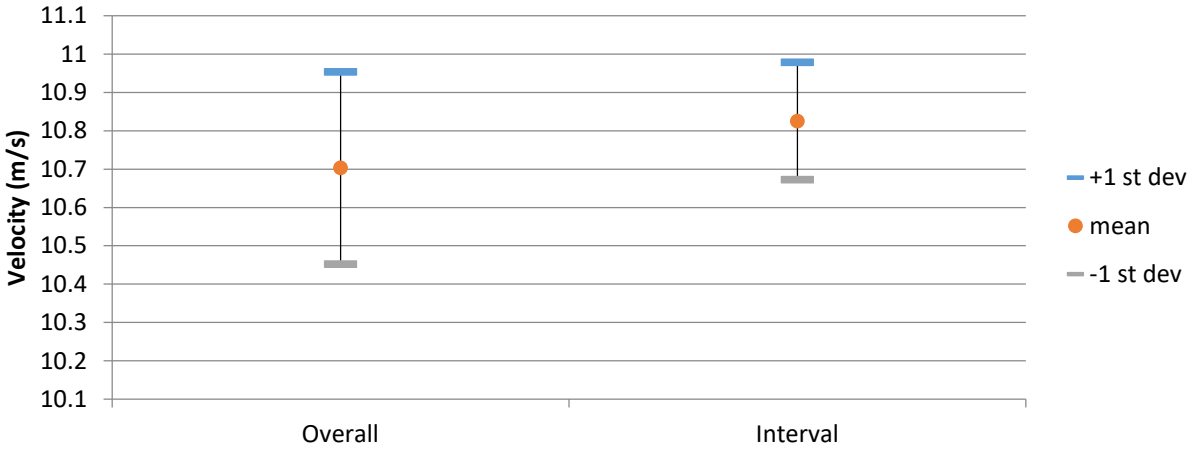
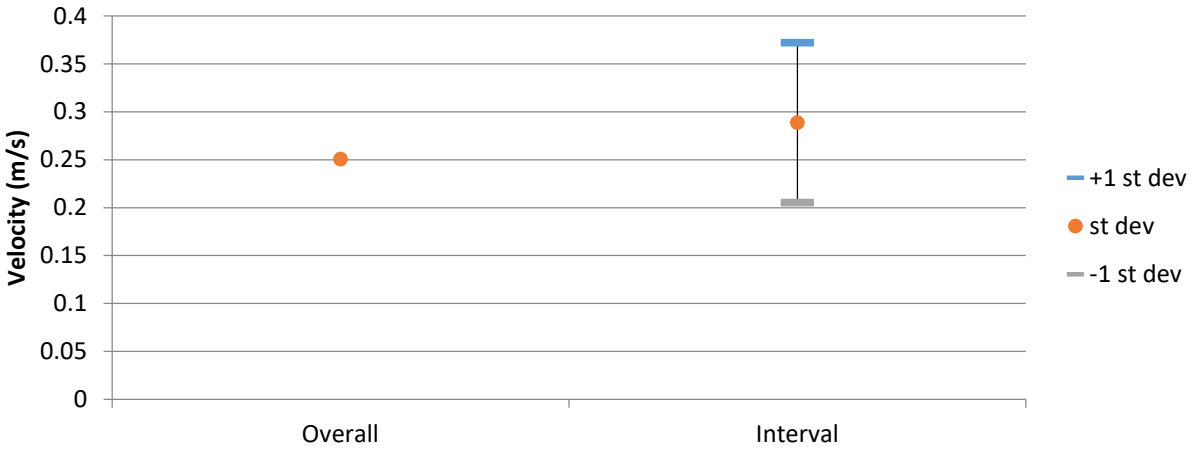


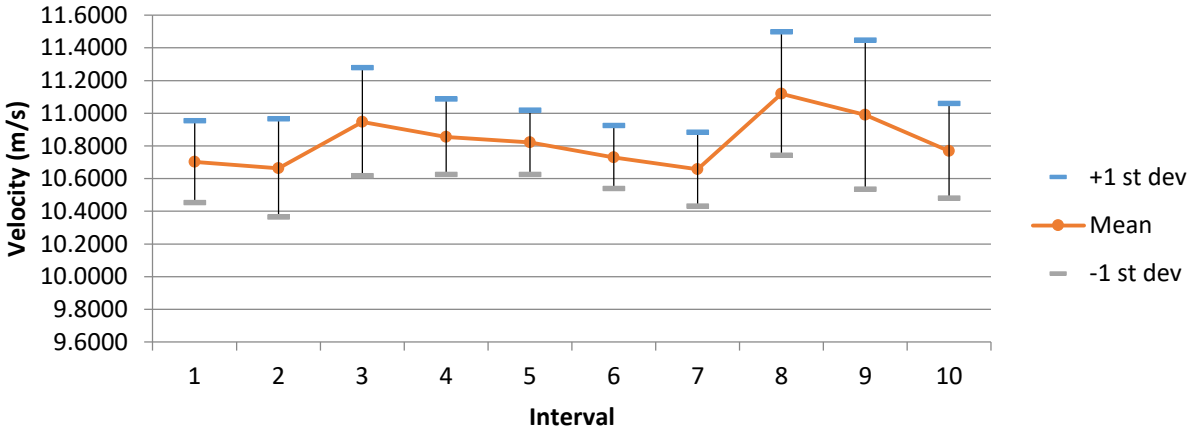
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 119
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: D2
First Sample Date: 14-Aug-13
First Sample Time: 09:09:11.750

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	13.5359	10.6317	11.7101	0.3657
u	12.8000	8.6600	10.4836	0.5611
v	1.2400	-5.4800	-2.3191	0.9061
w	-1.4500	-7.3100	-4.5008	0.7644

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	12.5963	10.8181	11.7111	0.3151	2.5136
2	12.7598	10.8510	11.8549	0.2980	2.3676
3	12.7880	10.8646	11.9587	0.2831	2.5776
4	12.8487	10.9025	11.7050	0.3017	1.9611
5	12.5114	10.7419	11.4970	0.2255	2.4824
6	12.7653	10.6317	11.7812	0.2925	2.6816
7	12.7811	10.7091	11.4948	0.3082	4.0902
8	13.5359	10.8990	12.0683	0.4936	2.1838
9	12.5096	10.8058	11.5942	0.2532	1.7962
10	12.3942	10.6911	11.4360	0.2054	2.5416
		Average	11.7101	0.2976	2.5196
		St Dev	0.2099	0.0780	0.5890

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.6316	-2.5321	-4.1874	0.3751	0.2874	0.2183	3.5278	2.7031	2.0531
2	10.7485	-2.8955	-4.0615	0.3649	0.2237	0.1892	3.3945	2.0814	1.7598
3	10.8012	-3.0980	-4.0557	0.3561	0.4258	0.2608	3.2970	3.9417	2.4145
4	10.4003	-3.3693	-4.1040	0.3177	0.6822	0.4123	3.0549	6.5593	3.9642
5	10.4643	-2.1199	-4.2491	0.2825	0.2375	0.2127	2.6992	2.2695	2.0331
6	10.8119	-2.0340	-4.1549	0.4453	0.3542	0.5116	4.1189	3.2758	4.7321
7	10.1923	-1.3452	-5.0431	0.3955	0.8075	0.5398	3.8803	7.9227	5.2963
8	10.8903	-1.2817	-4.6415	0.8500	1.2776	1.3223	7.8055	11.7317	12.1422
9	9.9916	-2.4204	-5.2782	0.4074	0.6465	0.5967	4.0772	6.4700	5.9717
10	9.9034	-2.0942	-5.2332	0.4323	0.5035	0.7316	4.3653	5.0840	7.3873

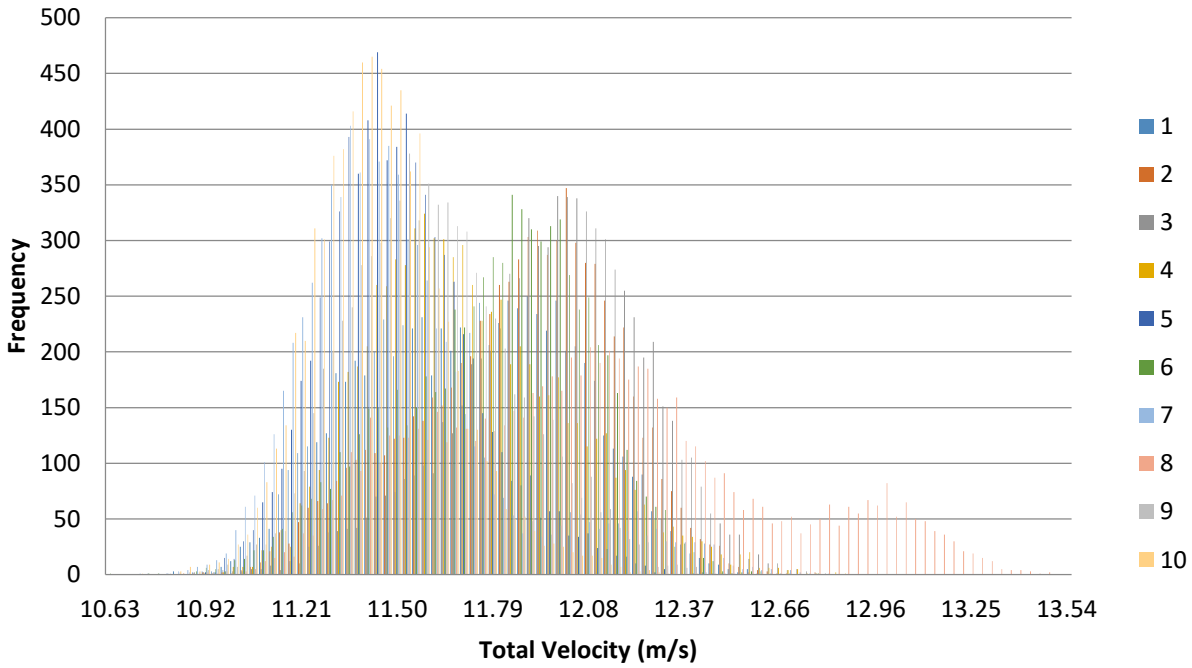


Figure 1. Velocity histogram for each interval (100 bins).

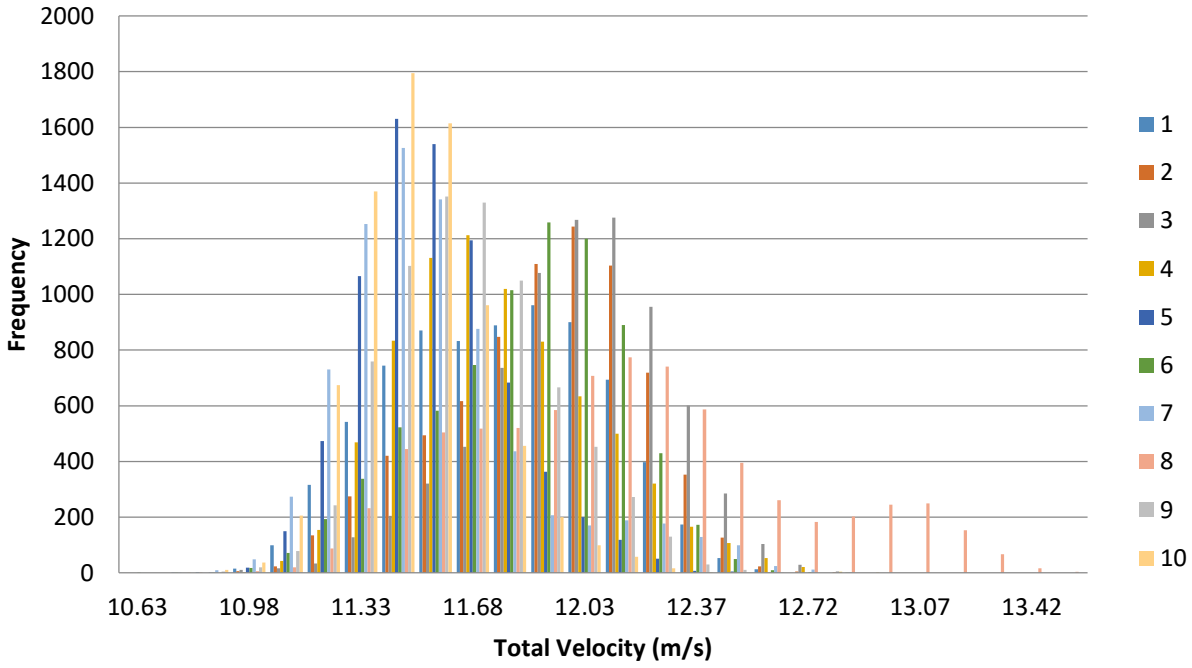
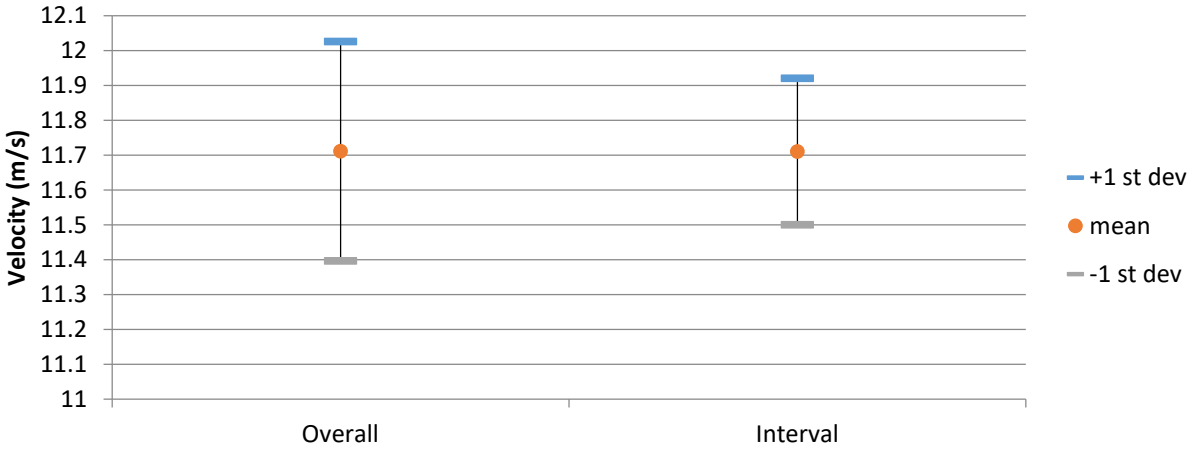
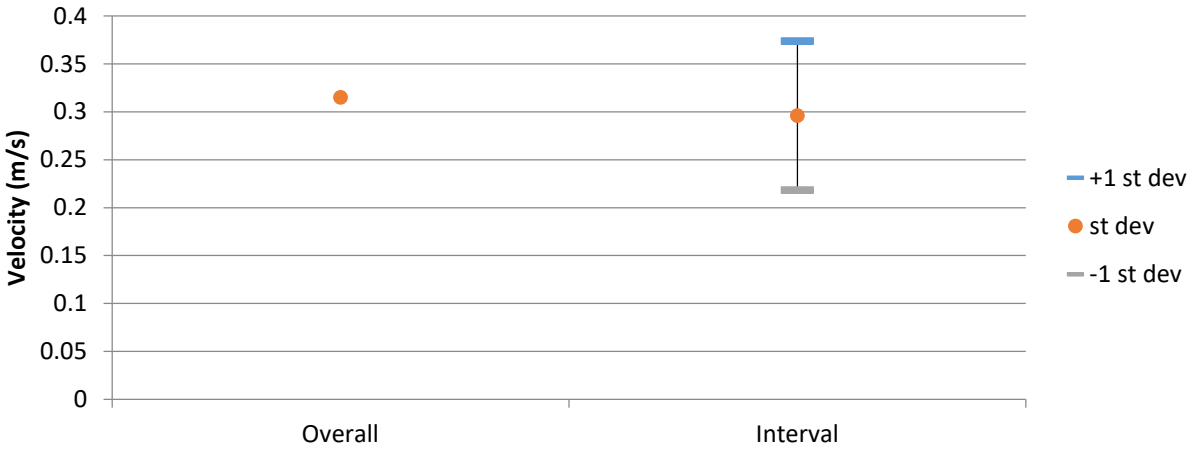


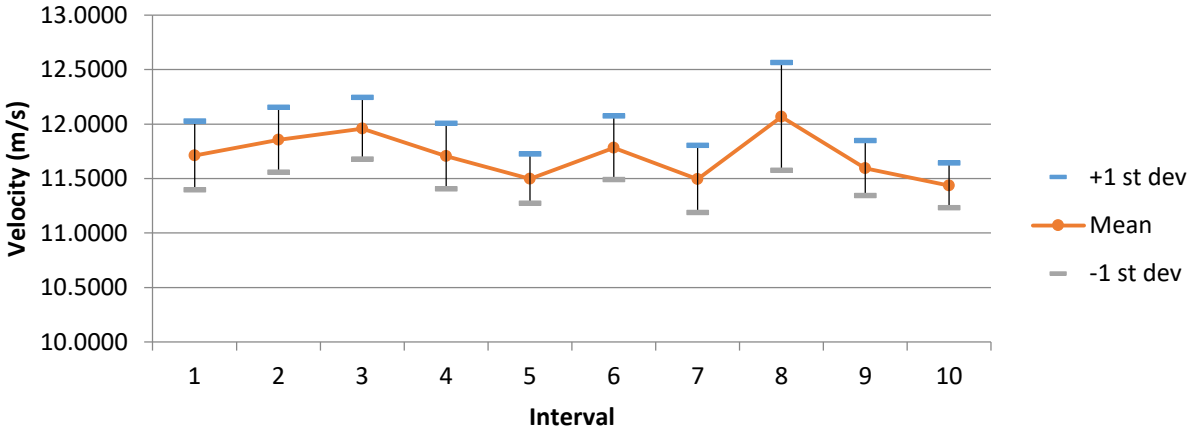
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 120
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: C2
First Sample Date: 14-Aug-13
First Sample Time: 09:11:37.484

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	13.4468	9.2092	10.4698	0.3321
u	11.1000	6.9200	9.1723	0.5420
v	-0.4390	-6.6600	-3.1505	0.8736
w	0.4570	-7.2300	-3.7440	0.7713

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.7090	9.3716	10.4566	0.3108	2.7817
2	11.5530	9.5686	10.4644	0.2911	3.7358
3	12.7718	9.4699	10.6388	0.3974	3.3960
4	12.3396	9.2092	10.5273	0.3575	2.8262
5	11.5627	9.7196	10.6077	0.2998	2.4834
6	11.3606	9.5196	10.3216	0.2563	2.6979
7	11.3251	9.5394	10.3957	0.2805	2.4599
8	11.4100	9.4738	10.3045	0.2535	3.2863
9	12.0954	9.5388	10.4763	0.3443	3.1819
10	13.4468	9.6424	10.5045	0.3342	2.9852
		Average	10.4697	0.3125	2.9834
		St Dev	0.1091	0.0460	0.3922

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.2344	-3.1993	-3.6361	0.4422	0.5837	0.4126	4.7881	6.3213	4.4681
2	9.3361	-3.1888	-3.4310	0.3487	0.4785	0.3675	3.7346	5.1248	3.9367
3	9.5019	-3.6442	-2.9226	0.3858	0.8113	0.6530	4.0607	8.5380	6.8720
4	9.5157	-3.0010	-3.0794	0.4193	0.7708	1.0701	4.4066	8.1008	11.2456
5	9.5884	-2.5228	-3.6952	0.4177	0.6353	0.2818	4.3567	6.6259	2.9390
6	9.1196	-2.4586	-4.0537	0.3719	0.7857	0.4479	4.0783	8.6160	4.9119
7	9.0536	-2.9814	-4.0242	0.4241	0.8271	0.4853	4.6846	9.1354	5.3606
8	8.9493	-2.8736	-4.1610	0.3788	0.5255	0.4069	4.2327	5.8725	4.5469
9	9.0062	-3.3585	-4.0242	0.5132	0.7434	0.6864	5.6987	8.2538	7.6211
10	8.4180	-4.2763	-4.4118	0.5504	0.8471	0.9068	6.5389	10.0632	10.7717

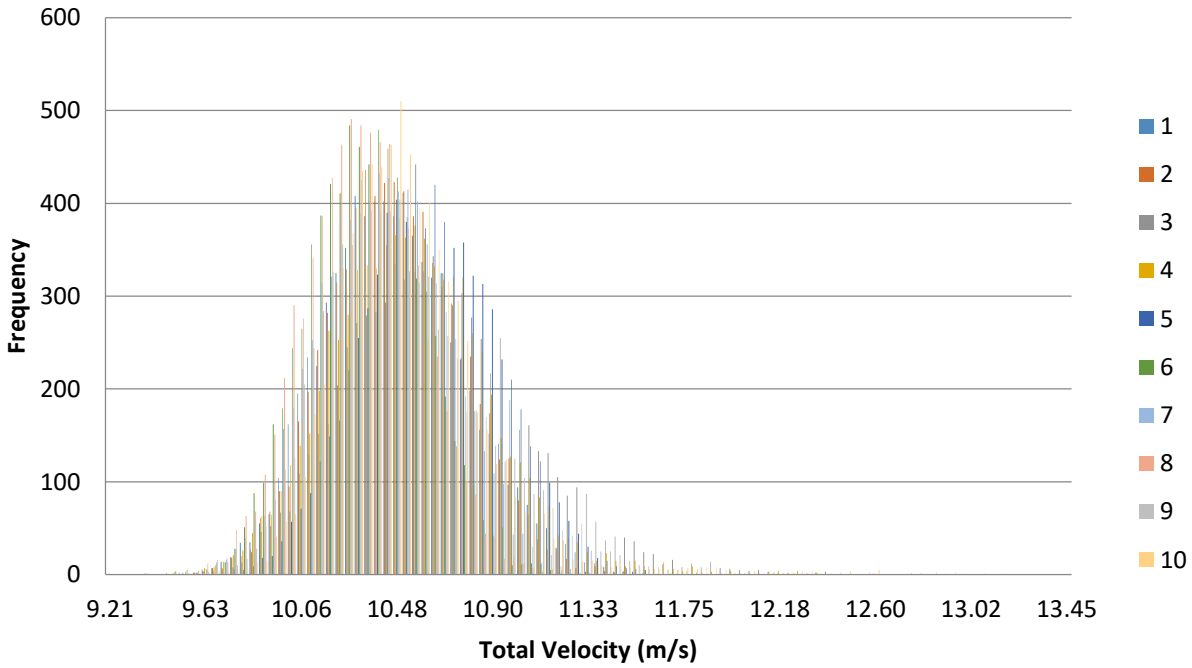


Figure 1. Velocity histogram for each interval (100 bins).

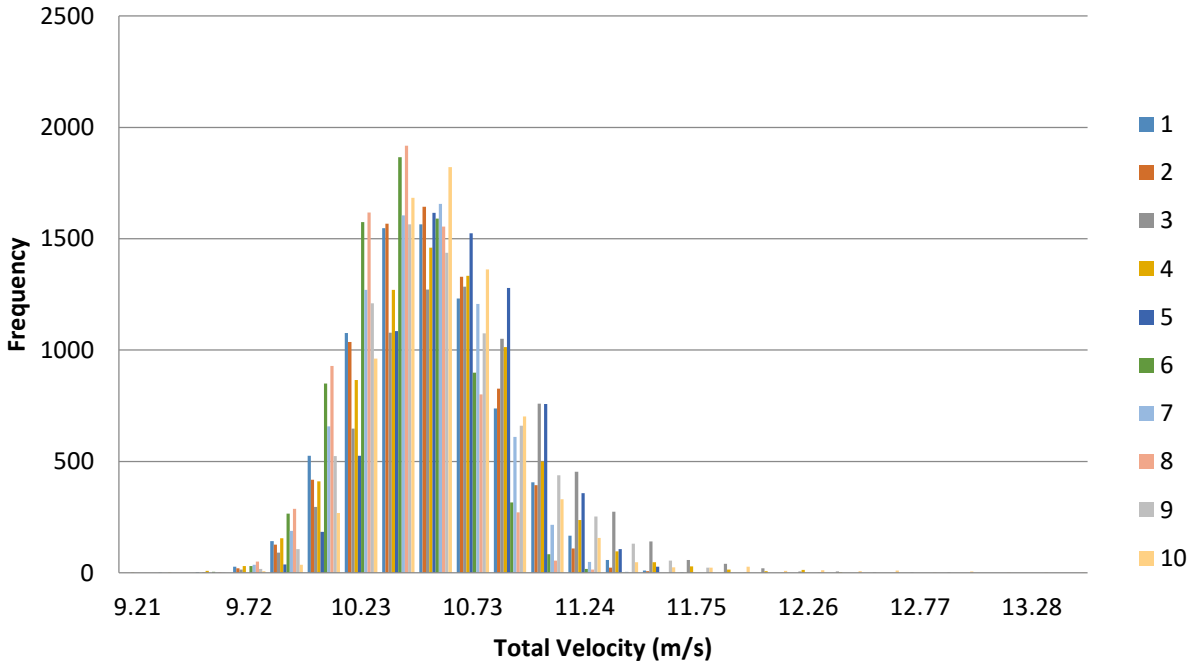
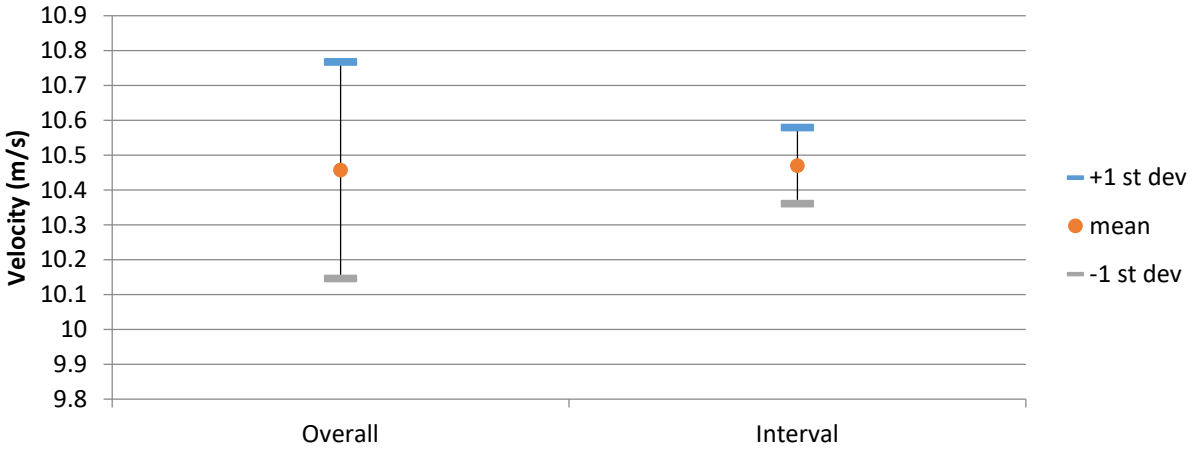
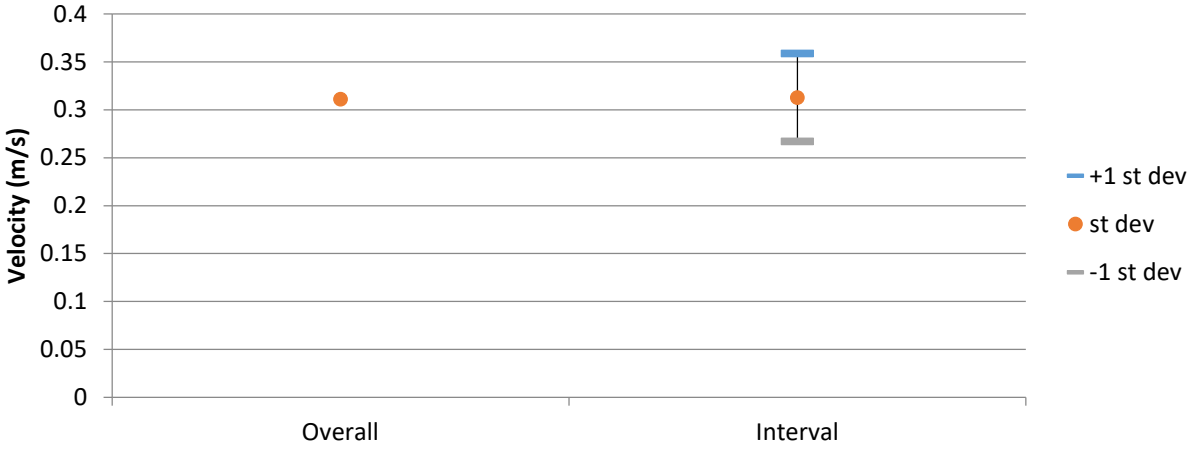


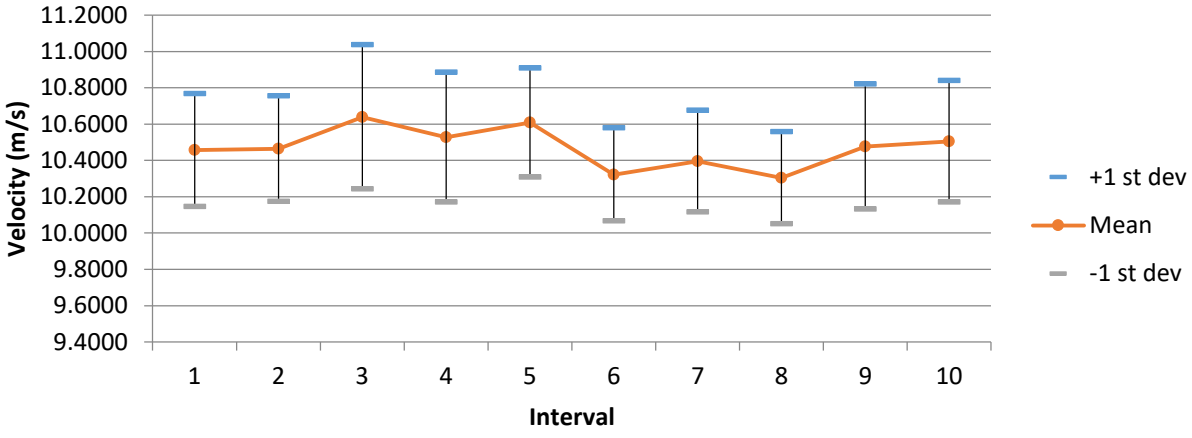
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 121
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: C3
First Sample Date: 14-Aug-13
First Sample Time: 09:13:06.421

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	13.3485	7.7701	10.3709	0.6280
u	11.1000	5.5400	8.6359	0.6230
v	-1.5800	-8.5000	-5.1940	1.1735
w	1.7600	-6.5500	-1.8615	1.0787

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	12.7367	8.6377	10.3227	0.5620	5.4446	4	0.03 %
2	13.0020	8.6570	10.0745	0.4137	4.1068	0	0.00 %
3	11.1505	8.8209	9.8225	0.3293	3.3523	0	0.00 %
4	12.5369	8.8433	10.3314	0.5405	5.2321	1	0.01 %
5	12.1137	8.9582	10.2088	0.4491	4.3993	0	0.00 %
6	12.6287	8.7247	10.4843	0.6023	5.7445	4	0.03 %
7	13.1987	8.8201	10.8224	0.6769	6.2544	1	0.01 %
8	13.3485	7.7701	10.6972	0.6445	6.0251	32	0.26 %
9	12.6130	8.5864	10.7557	0.6304	5.8610	0	0.00 %
10	12.6208	8.7342	10.1914	0.5464	5.3615	0	0.00 %
		Average	10.3711	0.5395	5.1782		
		St dev	0.3037	0.1053	0.8865		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.8271	-4.9632	-1.5230	0.4680	1.0101	0.8744	5.3021	11.4436	9.9058
2	8.8805	-4.3850	-1.5416	0.3828	0.7426	0.7071	4.3111	8.3620	7.9627
3	9.0441	-3.2612	-1.7301	0.2556	0.8104	0.6663	2.8260	8.9607	7.3674
4	8.3555	-5.8338	-1.1043	0.5758	0.6090	1.1227	6.8918	7.2887	13.4365
5	8.7180	-4.8635	-1.6446	0.3739	0.5365	1.2776	4.2891	6.1541	14.6546
6	8.4966	-5.8408	-1.3204	0.5905	0.7604	1.1428	6.9496	8.9493	13.4497
7	8.5898	-5.9012	-2.6130	0.7496	0.8659	0.9141	8.7271	10.0807	10.6417
8	8.4694	-5.7988	-2.4339	0.9457	0.9172	1.3528	11.1664	10.8301	15.9729
9	8.3529	-6.2810	-2.4352	0.7044	0.5196	0.4069	8.4325	6.2207	4.8718
10	8.6246	-4.8149	-2.2707	0.4502	0.9332	0.6059	5.2203	10.8200	7.0256

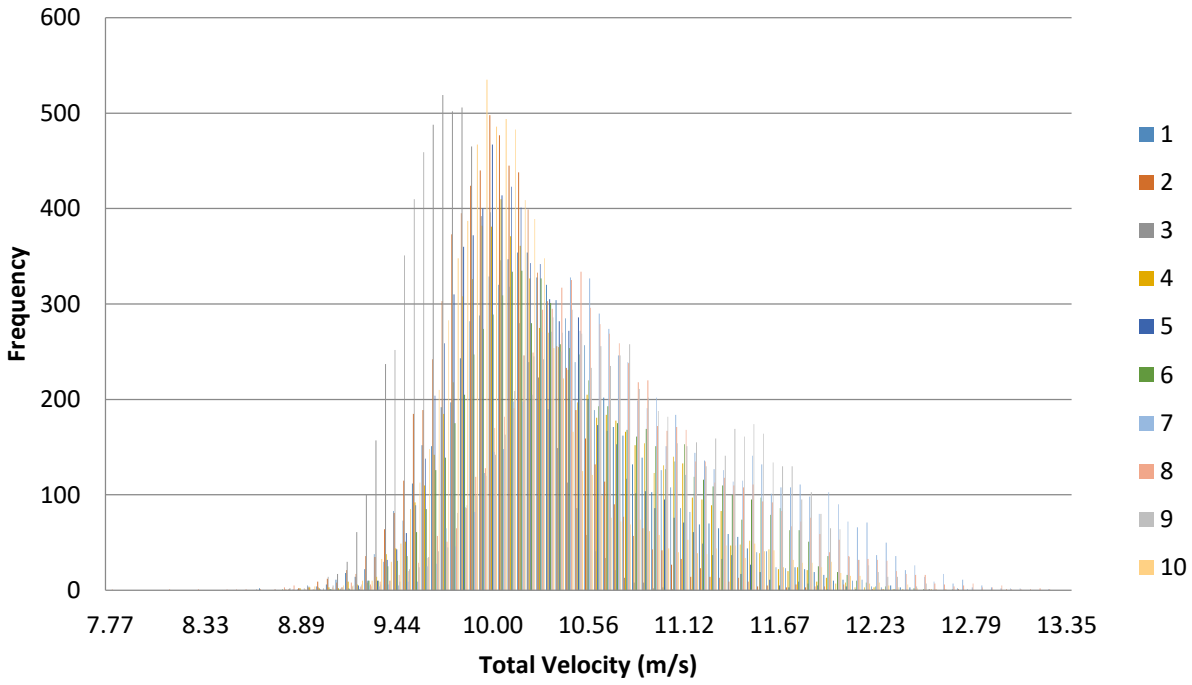


Figure 1. Velocity histogram for each interval (100 bins).

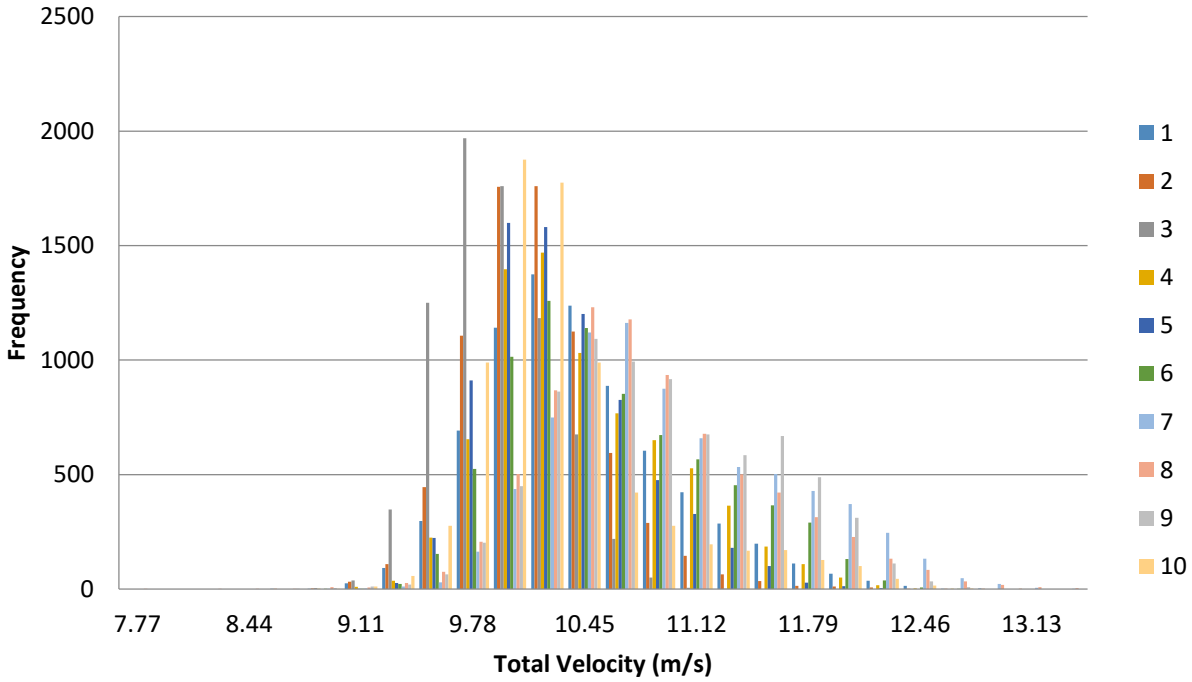
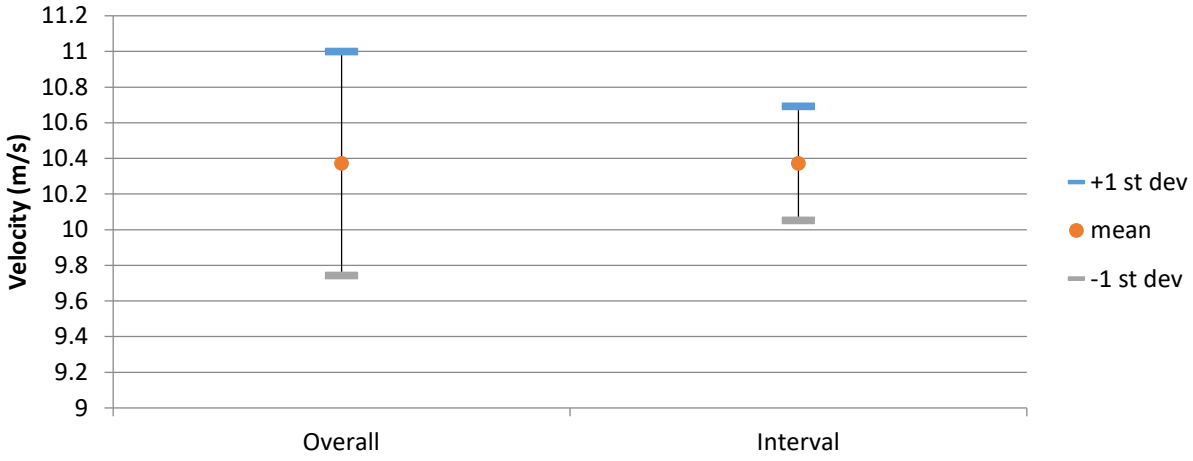
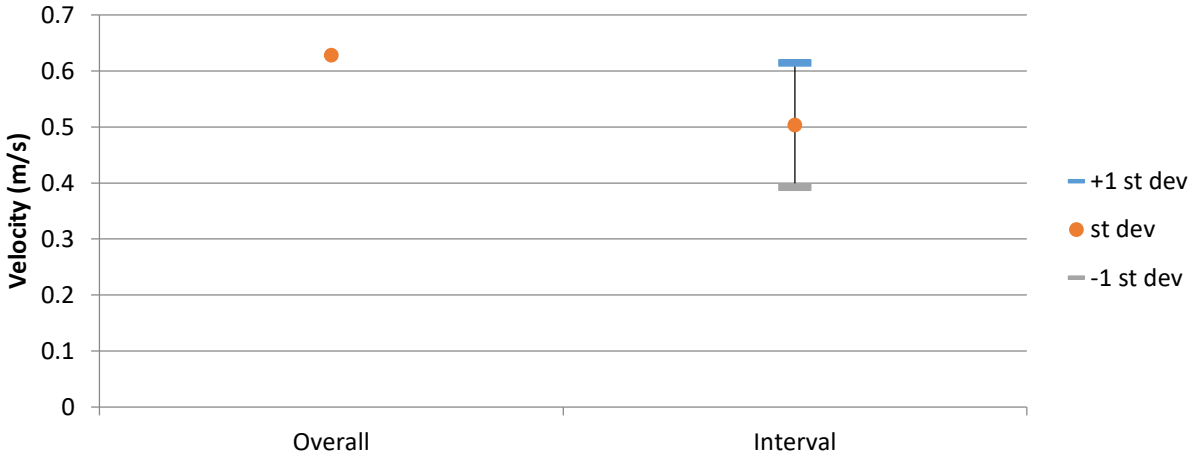


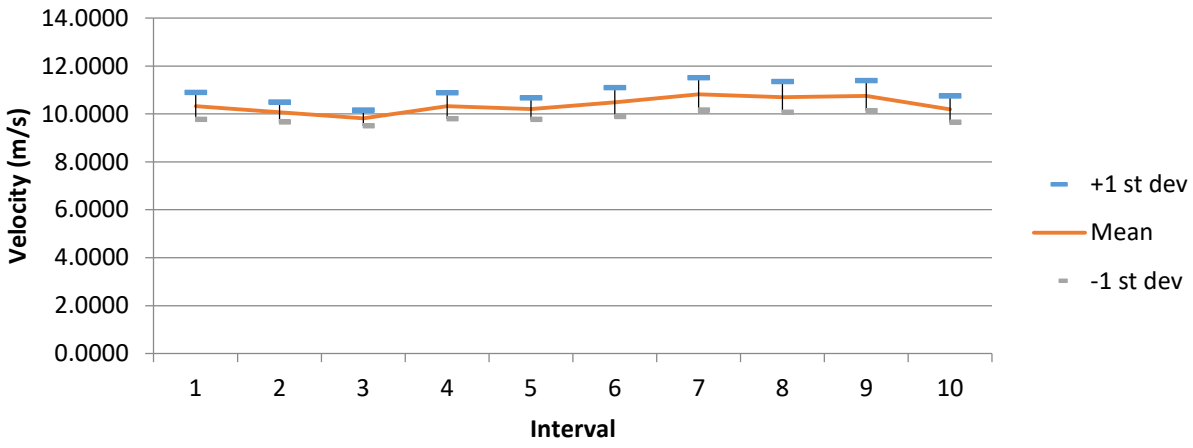
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 122
Blockage Condition: Existing Building.
Blower Frequency: 50 Hz
Inlet Probe Location: C4
First Sample Date: 14-Aug-13
First Sample Time: 09:14:46.437

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.5340	6.9880	9.3640	0.4461
u	10.9000	5.5400	8.5965	0.4350
v	-0.3550	-7.3400	-3.2702	0.8925
w	3.5500	-5.0100	-0.7141	1.3394

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.7786	7.7318	9.5530	0.5512	5.0226
2	12.2804	7.8820	9.4600	0.4751	4.3669
3	10.8705	6.9880	9.3450	0.4081	4.4903
4	10.8692	7.0598	9.1536	0.4110	4.0765
5	10.8868	7.5421	9.3138	0.3797	4.2953
6	11.9775	7.8288	9.4324	0.4051	6.2717
7	12.5340	7.8571	9.5499	0.5989	3.6335
8	10.5165	8.1049	9.2786	0.3371	3.2842
9	10.3454	8.1540	9.3170	0.3060	3.3142
10	10.1953	8.1125	9.2369	0.3061	4.4623
		Average	9.3640	0.4179	4.3218
		St Dev	0.1321	0.0984	0.8349

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.7019	-3.5397	-1.2070	0.4623	0.8377	0.9690	5.3130	9.6269	11.1350
2	8.4662	-4.0083	-0.0448	0.4187	0.8943	0.9986	4.9450	10.5635	11.7953
3	8.5878	-3.2770	1.2044	0.4661	0.8887	0.7416	5.4280	10.3483	8.6356
4	8.5337	-2.6642	-0.3511	0.4050	0.7880	1.7687	4.7461	9.2342	20.7267
5	8.5421	-3.0075	-1.1792	0.4595	0.6663	1.6835	5.3796	7.8001	19.7085
6	8.4974	-3.3760	-1.9408	0.4127	0.7883	0.9859	4.8570	9.2775	11.6021
7	8.5104	-3.8630	-0.9254	0.5579	1.3055	1.1565	6.5560	15.3395	13.5897
8	8.6044	-3.3239	-0.5986	0.3542	0.4699	0.6456	4.1165	5.4606	7.5036
9	8.8217	-2.7115	-1.1682	0.3080	0.3442	0.3839	3.4913	3.9013	4.3514
10	8.6996	-2.9308	-0.9302	0.3087	0.3143	0.2859	3.5490	3.6126	3.2860

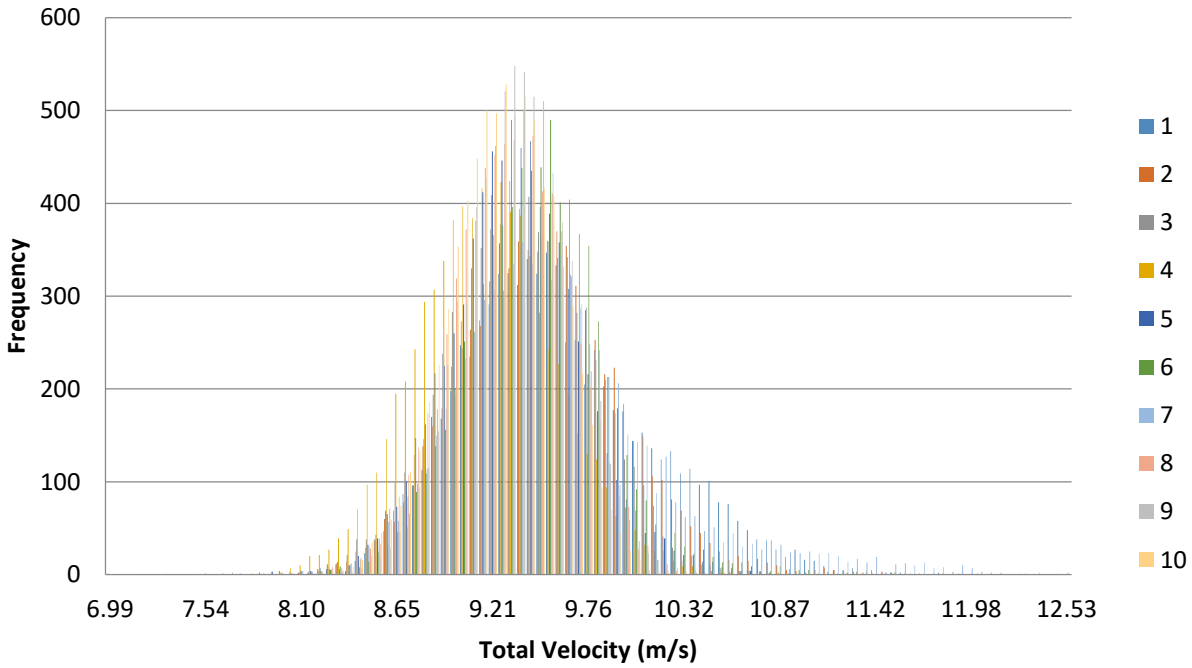


Figure 1. Velocity histogram for each interval (100 bins).

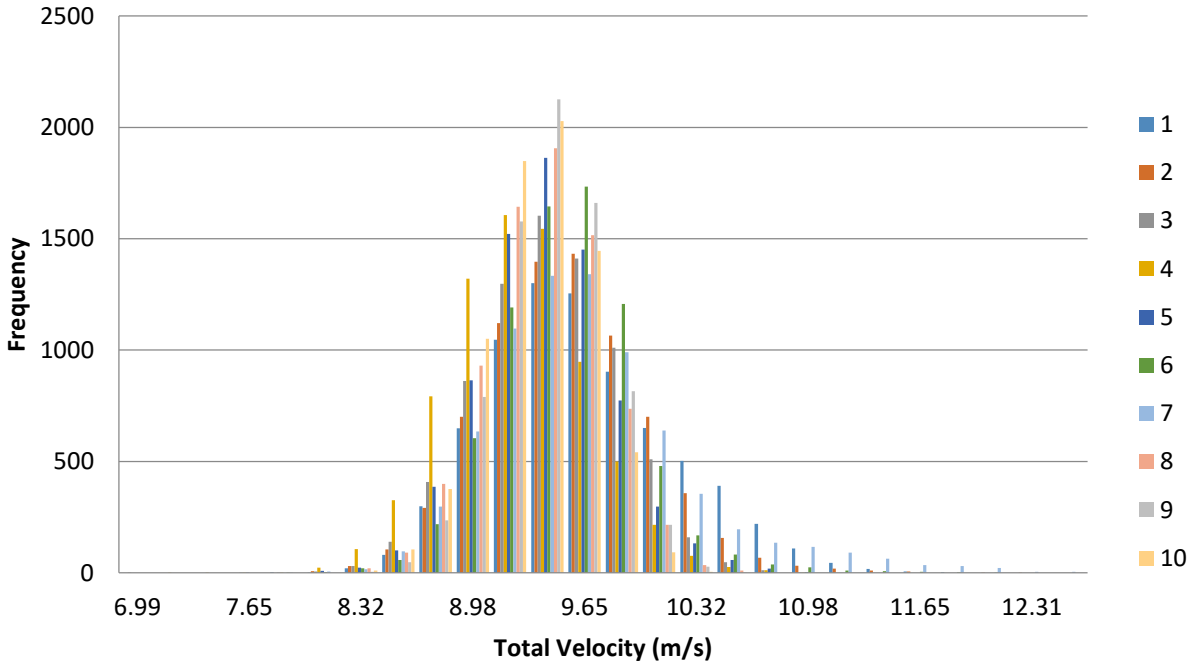
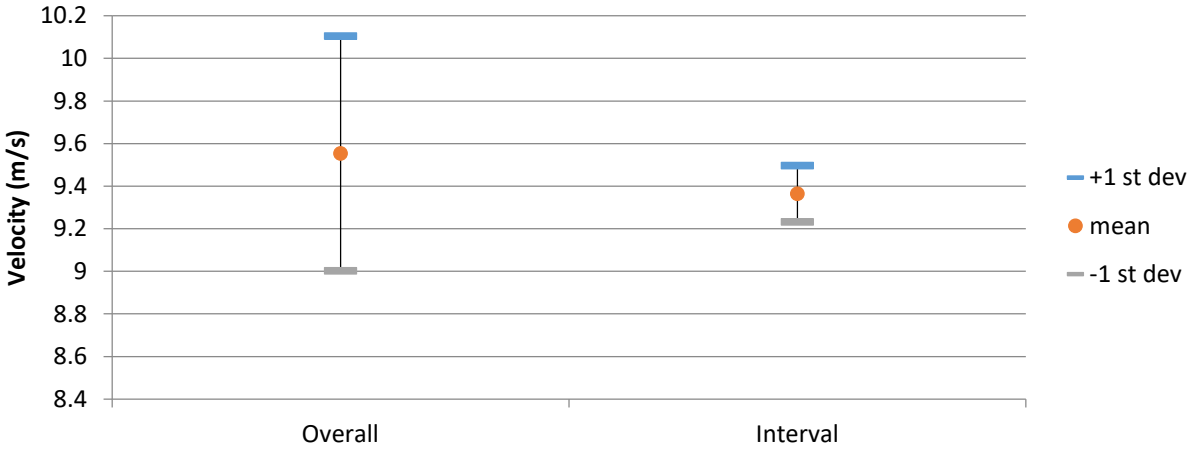
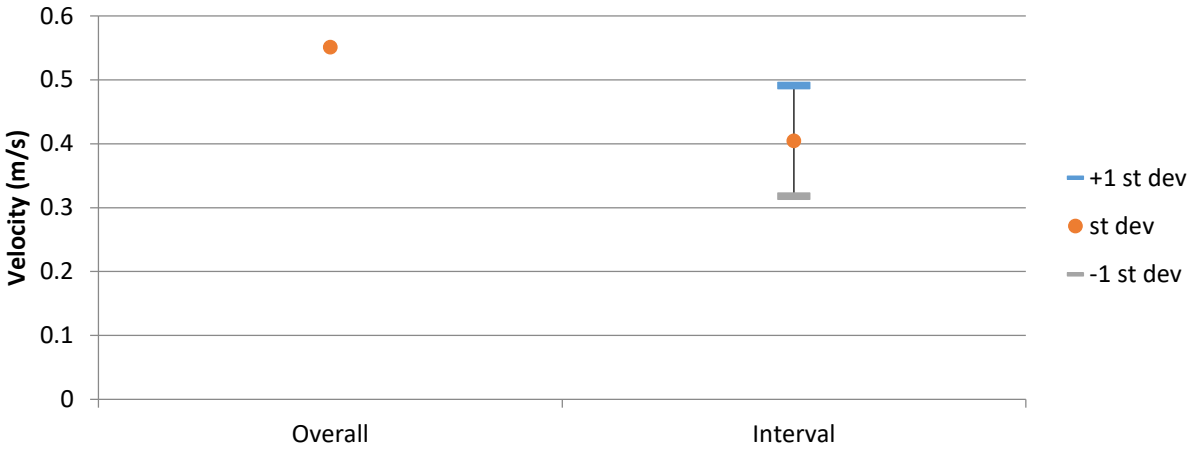


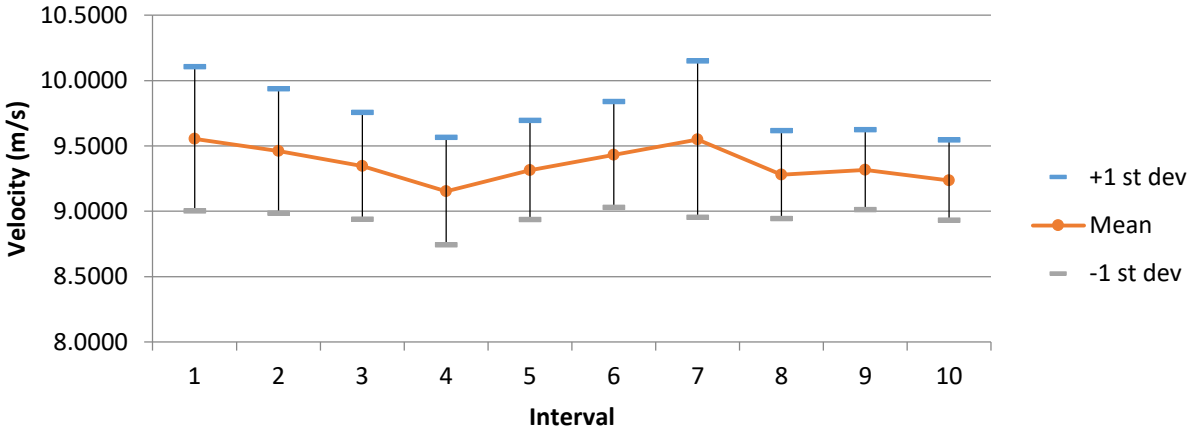
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 123
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: C5
First Sample Date: 14-Aug-13
First Sample Time: 09:16:27.828

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.7735	7.2386	9.1736	0.3332
u	10.3000	5.3700	8.5835	0.3685
v	-0.2750	-8.3100	-2.9431	0.8902
w	3.6900	-5.8200	-0.6555	0.7546

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	9.9980	8.1724	9.0722	0.2421	2.6691	0	0.00 %
2	10.2300	8.0851	9.2113	0.2944	3.1959	0	0.00 %
3	10.5297	7.8316	9.1129	0.3140	3.4460	0	0.00 %
4	10.5138	8.0537	9.1979	0.2655	2.8868	0	0.00 %
5	9.9409	8.2099	9.1056	0.2334	2.5630	0	0.00 %
6	10.1940	8.1824	9.1886	0.2541	2.7648	0	0.00 %
7	9.9888	8.1860	9.0709	0.2468	2.7211	0	0.00 %
8	10.0518	8.1876	9.1170	0.2575	2.8247	0	0.00 %
9	10.1791	8.2901	9.0708	0.2436	2.6854	0	0.00 %
10	12.7735	7.2386	9.6321	0.5196	5.3946	716	5.73 %
		Average	9.1779	0.2871	3.1151		
		St dev	0.1597	0.0811	0.8009		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.5417	-2.9338	-0.3484	0.3241	0.6468	0.3900	3.7944	7.5727	4.5663
2	8.6434	-2.7453	-1.1806	0.3153	0.7622	0.7837	3.6478	8.8183	9.0673
3	8.6533	-2.6032	-0.5637	0.3149	0.6830	0.7777	3.6392	7.8929	8.9868
4	8.8669	-2.2398	-0.4799	0.3219	0.5350	0.6424	3.6299	6.0332	7.2449
5	8.7178	-2.4497	-0.7199	0.2448	0.3482	0.5157	2.8076	3.9940	5.9149
6	8.5926	-3.0709	-0.7244	0.2457	0.5398	0.5972	2.8593	6.2816	6.9507
7	8.4243	-3.2685	-0.2683	0.2964	0.6579	0.3111	3.5189	7.8092	3.6928
8	8.5567	-2.8476	-0.6880	0.3470	0.8862	0.6940	4.0552	10.3564	8.1109
9	8.4866	-3.0864	-0.5568	0.2670	0.3280	0.5482	3.1458	3.8652	6.4599
10	8.3272	-4.3161	-1.0638	0.6083	1.3334	1.3404	7.3049	16.0129	16.0961

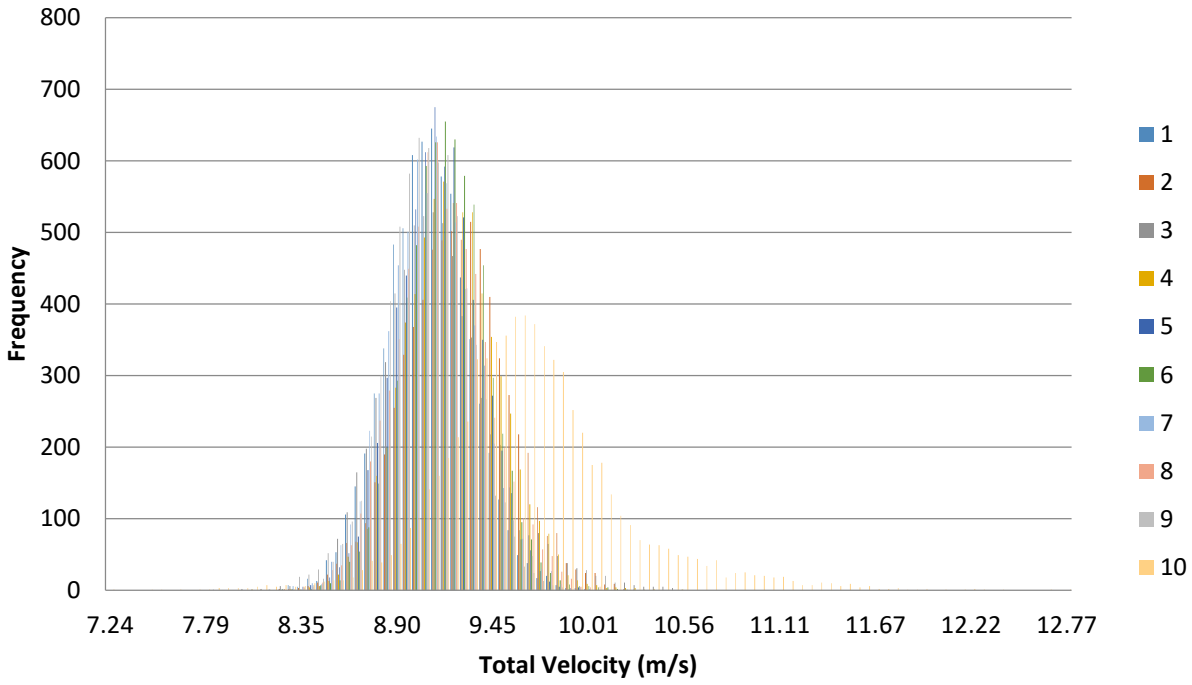


Figure 1. Velocity histogram for each interval (100 bins).

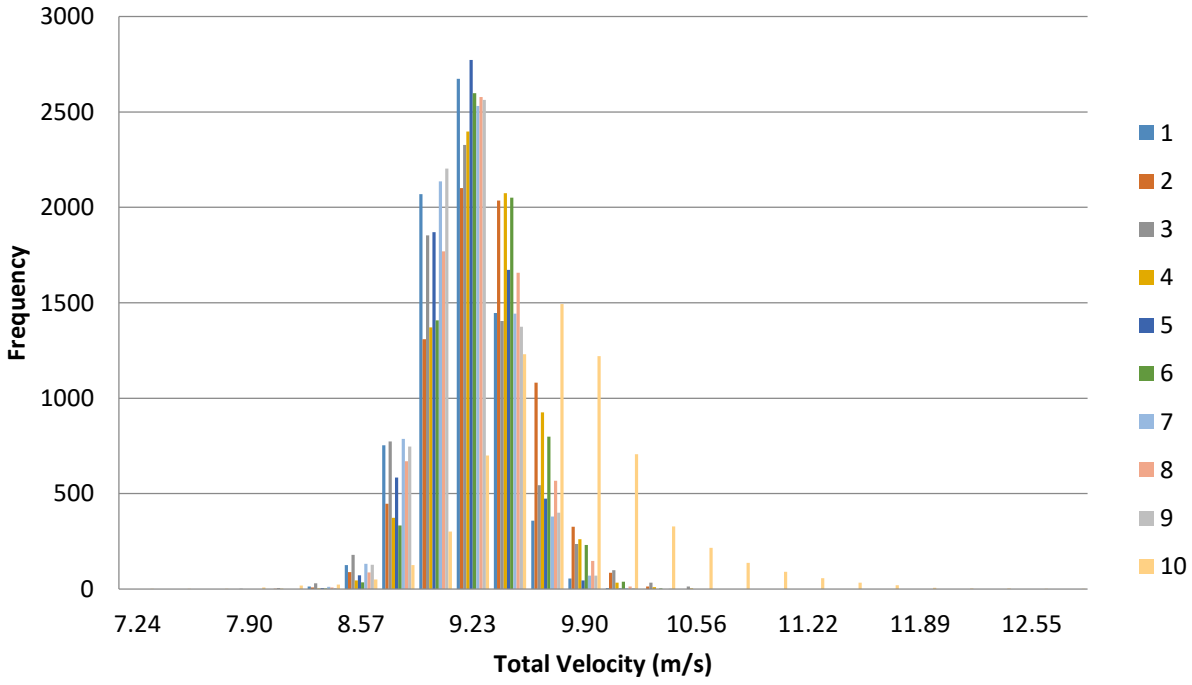
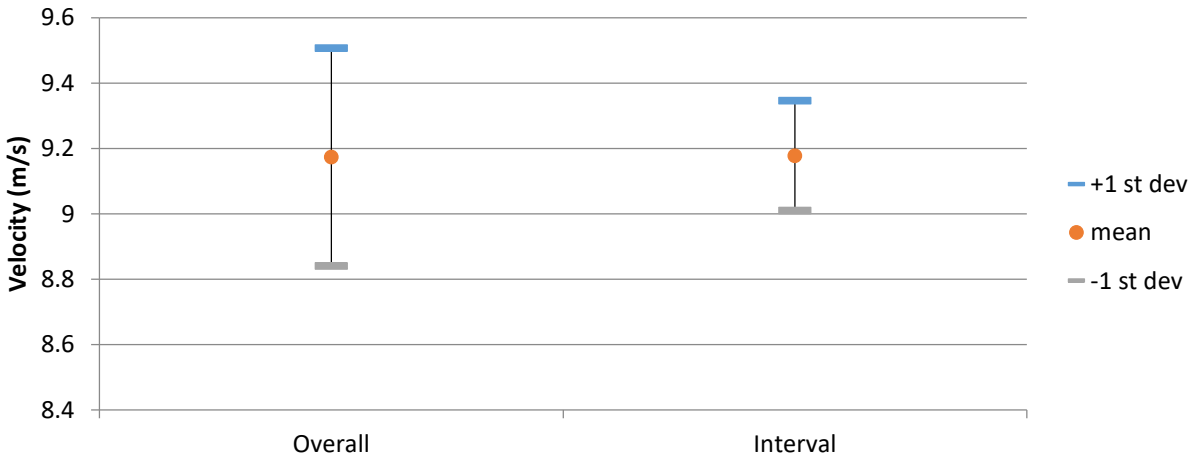
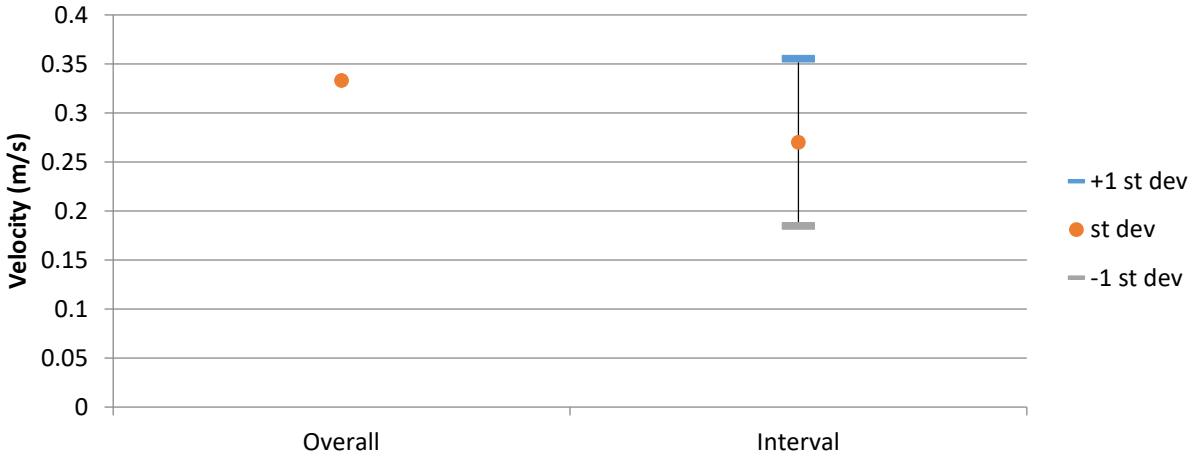


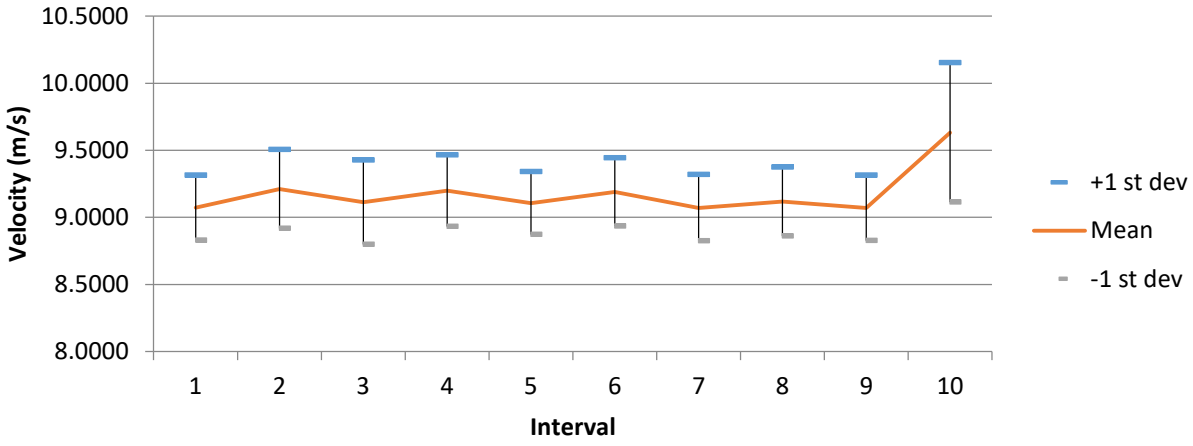
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 124
Blockage Condition: Existing Buildings
Blower Frequency: 50 Hz
Inlet Probe Location: B5
First Sample Date: 14-Aug-13
First Sample Time: 09:18:13.265

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.5658	6.3642	8.5153	0.4877
u	9.7300	4.7100	7.2218	0.6118
v	-0.9350	-7.5600	-4.2215	1.0241
w	2.6100	-4.4500	-0.3987	1.0912

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	11.1496	6.7190	8.4944	0.4816	5.6693	39	0.31 %
2	9.4335	7.2847	8.2968	0.2801	3.3764	172	1.38 %
3	11.5658	6.9236	8.6980	0.5594	6.4315	74	0.59 %
4	9.7621	7.0055	8.2271	0.2892	3.5147	0	0.00 %
5	11.5385	6.5943	8.6608	0.5686	6.5654	5	0.04 %
6	11.3376	6.6242	8.4882	0.5609	6.6083	0	0.00 %
7	9.3719	6.3642	8.2729	0.3003	3.6298	0	0.00 %
8	10.1459	7.2140	8.5493	0.4156	4.8616	0	0.00 %
9	10.4131	7.5713	8.8581	0.4449	5.0230	0	0.00 %
10	10.2485	7.4498	8.6041	0.4470	5.1952	0	0.00 %
		Average	8.5150	0.4348	5.0875		
		St dev	0.1928	0.1074	1.1931		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	6.9306	-4.7750	-0.3384	0.5234	0.7326	0.7932	7.5519	10.5712	11.4444
2	6.6097	-4.9303	0.3916	0.4844	0.5771	0.4446	7.3289	8.7310	6.7262
3	6.8077	-5.2699	-0.5739	0.6147	0.7370	0.7750	9.0289	10.8253	11.3843
4	7.2540	-3.6845	0.4500	0.5276	0.9248	0.4863	7.2732	12.7486	6.7045
5	7.6473	-3.5841	-1.0064	0.5708	1.0997	1.2078	7.4641	14.3800	15.7939
6	7.3522	-3.7911	-0.8442	0.5317	0.8541	1.4878	7.2313	11.6167	20.2366
7	7.5108	-3.2800	0.3504	0.3624	0.7137	0.7729	4.8253	9.5029	10.2911
8	7.5854	-3.7412	-0.1211	0.4298	0.4963	1.1325	5.6665	6.5427	14.9298
9	7.4572	-4.3621	-1.5478	0.5061	1.0080	0.5996	6.7866	13.5175	8.0402
10	7.0440	-4.8256	-0.7311	0.5216	0.4693	0.5471	7.4050	6.6627	7.7662

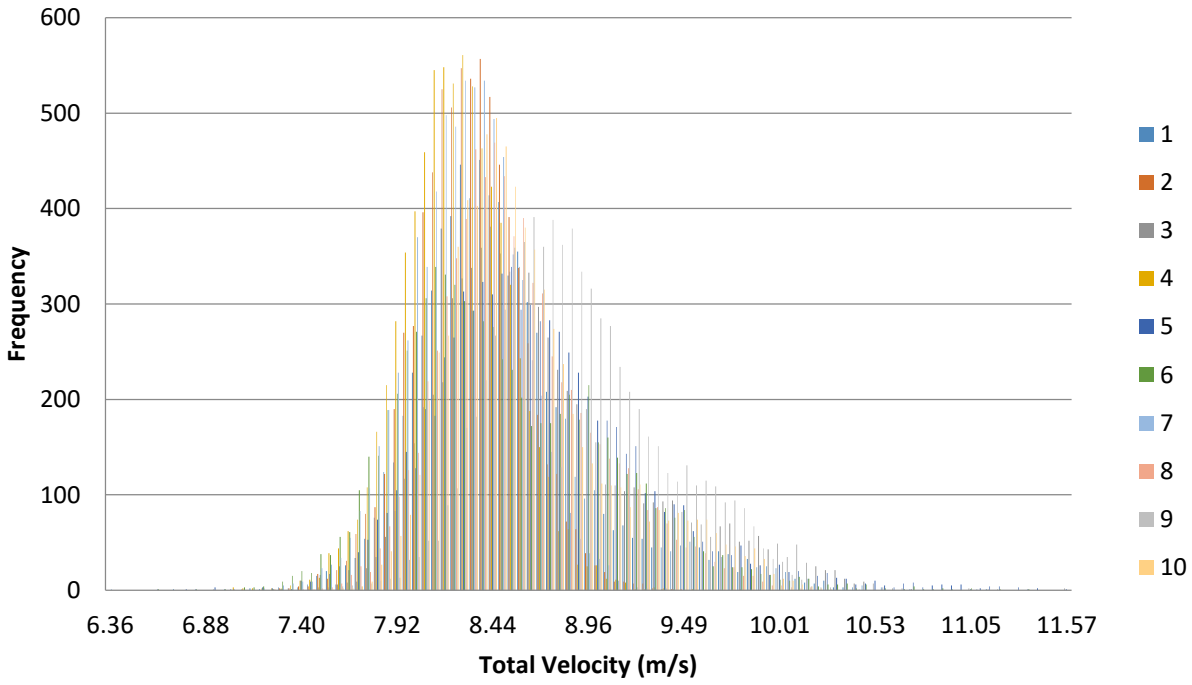


Figure 1. Velocity histogram for each interval (100 bins).

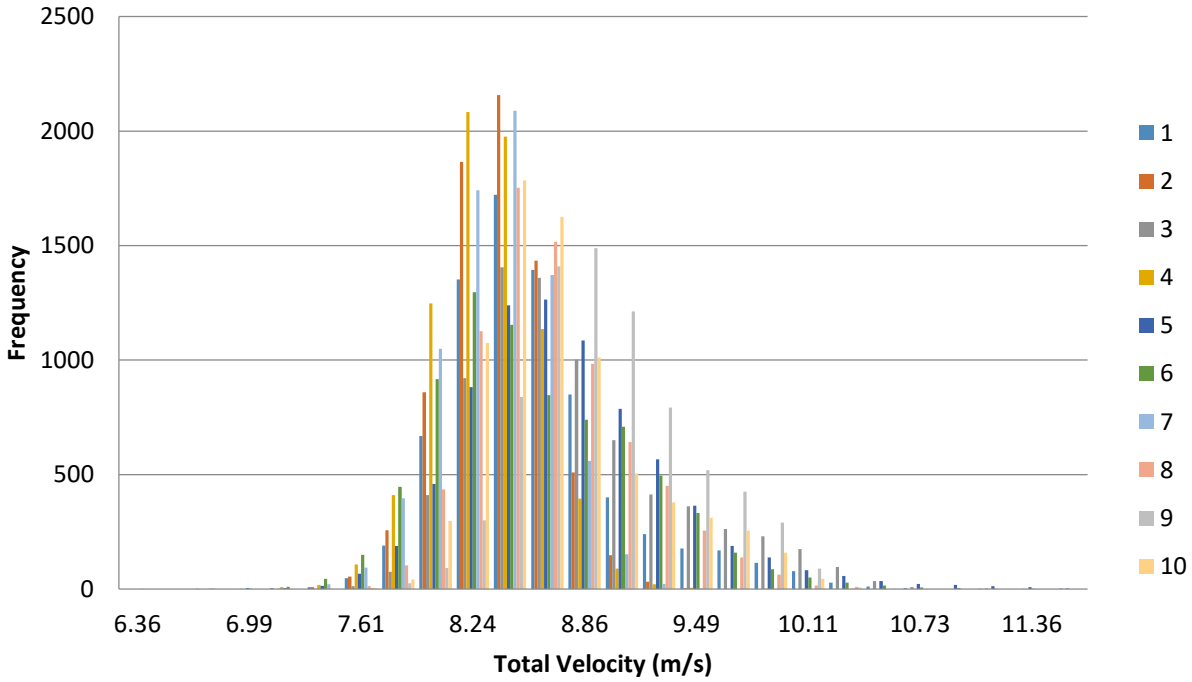
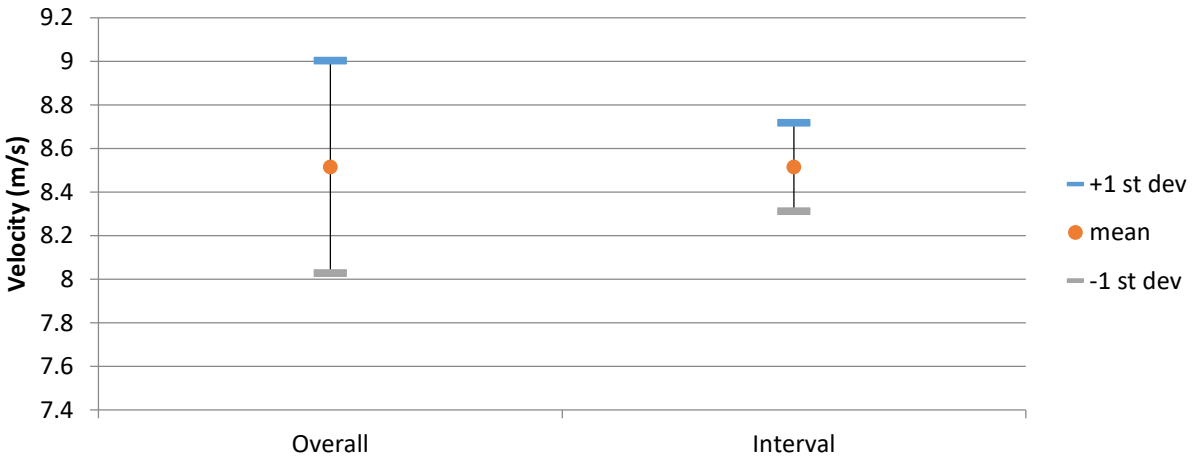
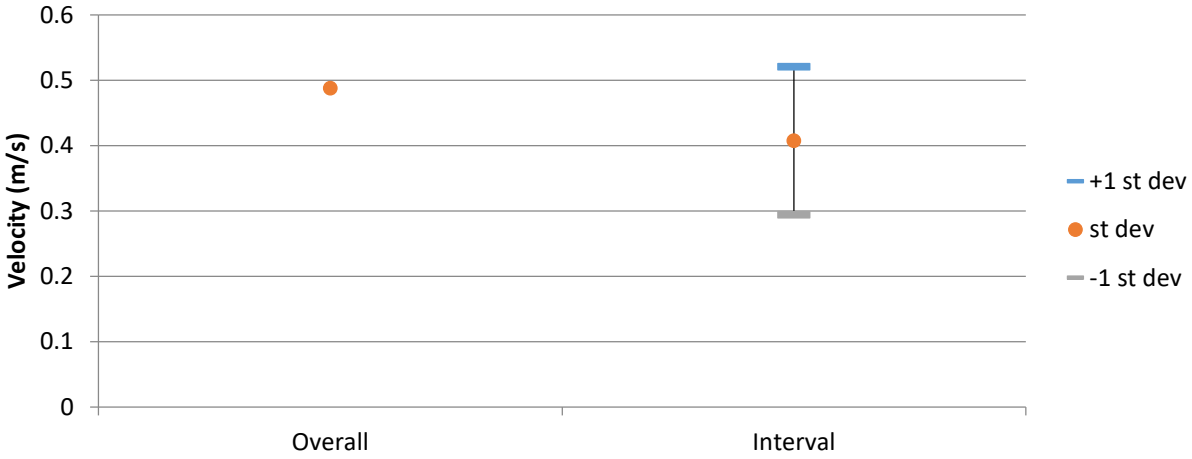


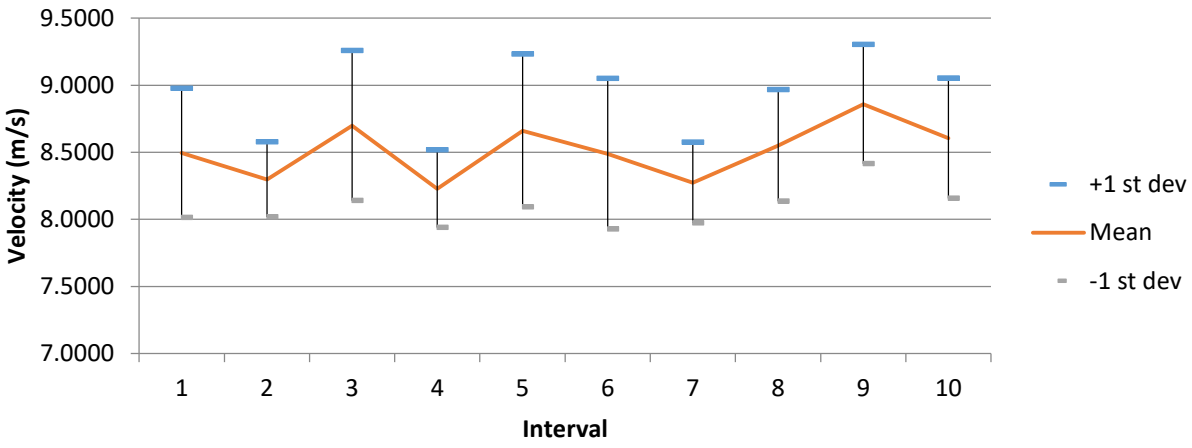
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 125
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: B4
First sample Date: 14-Aug-13
First Sample Time: 09:20:00.906

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.4235	6.2353	8.6594	0.6272
u	9.1600	4.2500	7.1304	0.6647
v	-0.9950	-7.8500	-4.5038	1.1047
w	2.4700	-4.6800	-1.0643	1.2067

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	10.0647	7.0284	8.4589	0.5152	6.0901	0	0.00 %
2	11.4235	6.9012	8.4249	0.4454	5.2865	0	0.00 %
3	10.6155	6.5686	8.5534	0.5607	6.5550	7	0.06 %
4	10.7249	6.7950	8.4859	0.5405	6.3696	0	0.00 %
5	11.0907	7.2281	9.1190	0.5645	6.1906	56	0.45 %
6	10.8651	6.2353	9.0497	0.5658	6.2519	1140	9.12 %
7	11.0089	6.6454	9.0880	0.6060	6.6681	1260	10.08 %
8	10.8204	6.9126	9.0165	0.6206	6.8834	307	2.46 %
9	9.7579	6.4211	8.1531	0.4105	5.0351	1	0.01 %
10	10.0531	6.9345	8.3936	0.4590	5.4684	0	0.00 %
		Average	8.6743	0.5288	6.0799		
		St dev	0.3371	0.0665	0.5864		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	7.4253	-3.8511	-0.6731	0.4426	0.7740	0.7780	5.9605	10.4242	10.4777
2	7.3436	-3.9323	-0.0632	0.5177	0.6439	1.0490	7.0496	8.7679	14.2850
3	7.1983	-4.2954	-0.9968	0.5966	0.7930	1.1090	8.2878	11.0167	15.4059
4	7.4692	-3.8496	-0.3605	0.4929	0.7200	0.8962	6.5989	9.6389	11.9983
5	7.1064	-5.0459	-2.5286	0.7061	0.5703	0.5435	9.9365	8.0256	7.6485
6	6.6011	-5.6992	-2.1535	0.6260	0.6112	0.8715	9.4829	9.2598	13.2023
7	6.5312	-5.8245	-2.3014	0.7281	0.4743	0.5714	11.1485	7.2621	8.7489
8	6.8208	-5.6709	-1.2780	0.6016	0.7578	0.6554	8.8201	11.1095	9.6085
9	7.1716	-3.6411	-0.0138	0.6192	0.9939	0.7626	8.6344	13.8589	10.6342
10	7.4430	-3.6831	-0.6674	0.4621	0.5698	0.8461	6.2088	7.6557	11.3672

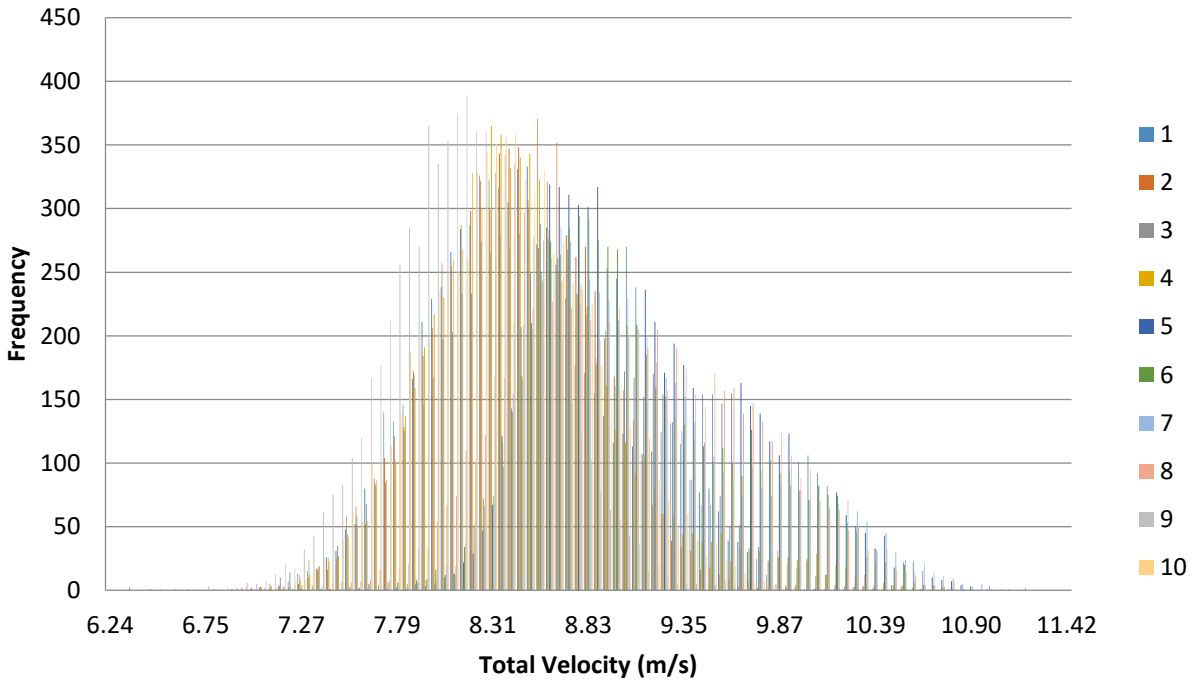


Figure 1. Velocity histogram for each interval (100 bins).

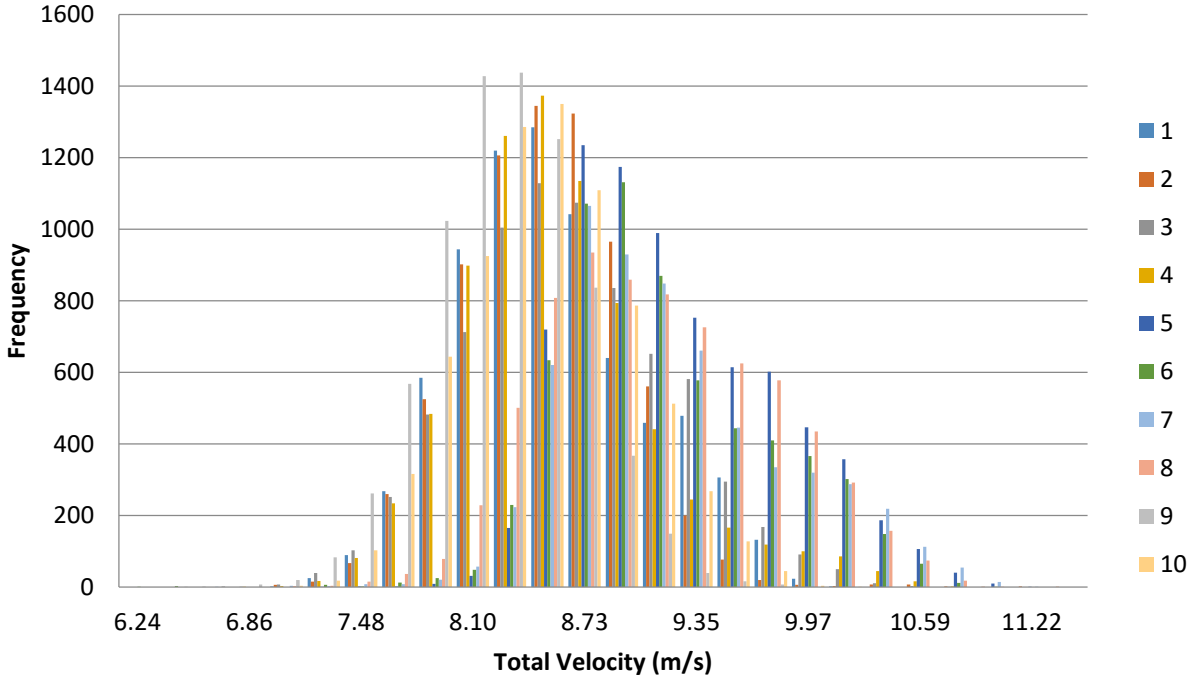
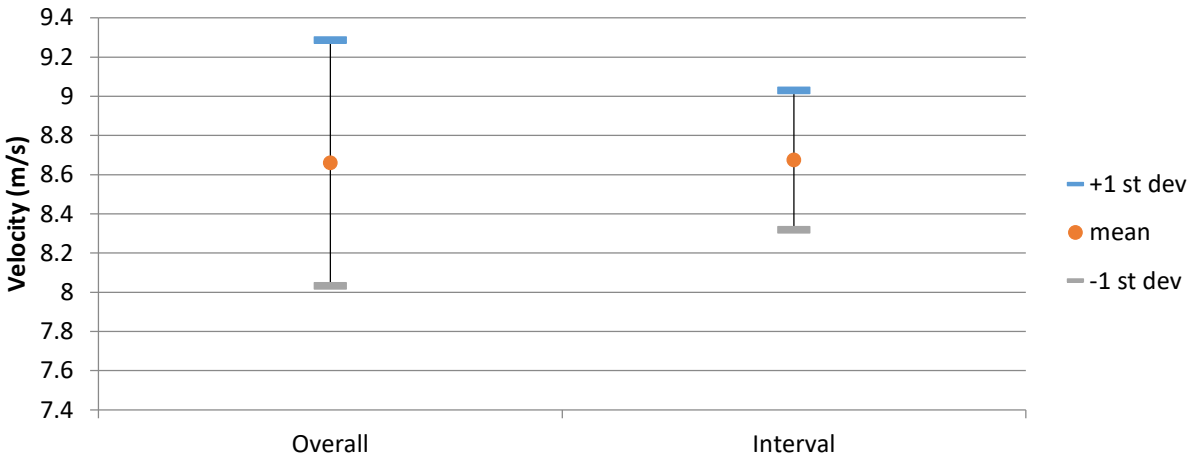
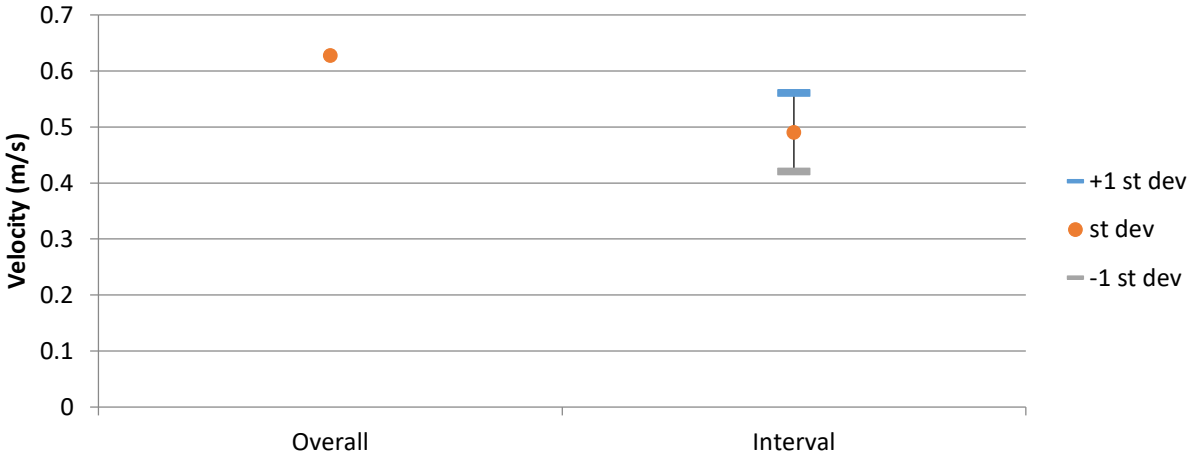


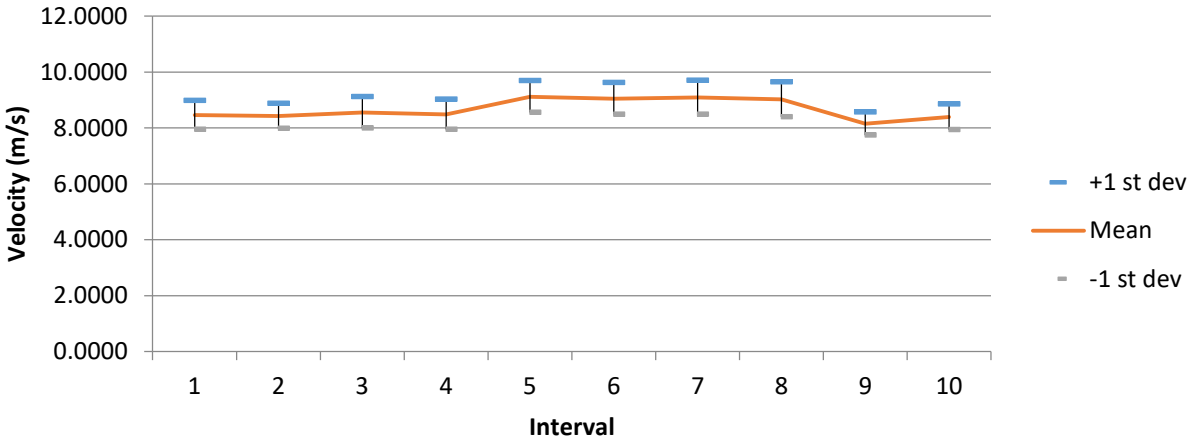
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 126
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: B3
First Sample Date: 14-Aug-13
First Sample Time: 09:22:31.218

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.4577	6.8526	8.9128	0.5538
u	8.8800	4.6800	7.0252	0.6324
v	-2.4200	-7.6300	-5.1290	0.6855
w	2.3300	-5.0700	-1.4559	1.0464

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	10.7792	7.8016	9.3563	0.3786	4.0466	0	0.00 %
2	10.9597	7.4517	8.8484	0.4149	4.6891	17	0.14 %
3	10.6219	7.5537	9.1009	0.5103	5.6072	41	0.33 %
4	10.9048	7.2872	8.8780	0.6111	6.8829	7	0.06 %
5	11.4577	7.4760	8.6585	0.4770	5.5089	36	0.29 %
6	10.3243	7.5000	8.4993	0.3486	4.1017	27	0.22 %
7	10.7888	6.8526	8.8109	0.5567	6.3180	385	3.08 %
8	11.2463	7.2748	8.9232	0.5074	5.6867	41	0.33 %
9	11.0674	7.4975	8.7295	0.4354	4.9875	133	1.06 %
10	10.8453	7.4492	9.3130	0.5770	6.1954	0	0.00 %
		Average	8.9118	0.4817	5.4024		
		St dev	0.2603	0.0824	0.8947		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	7.5120	-5.2715	-1.7669	0.3344	0.3381	0.3435	4.4516	4.5005	4.5721
2	7.2404	-4.4420	-2.0697	0.6611	0.6231	1.0963	9.1305	8.6053	15.1414
3	7.3157	-4.8856	-2.1592	0.5619	0.6136	0.5859	7.6806	8.3873	8.0086
4	6.9097	-5.0674	-2.1386	0.6475	0.5123	0.7166	9.3709	7.4146	10.3706
5	6.9280	-5.1049	-0.4897	0.4439	0.5086	0.6663	6.4072	7.3410	9.6177
6	6.5052	-5.4256	-0.4353	0.3256	0.4677	0.2996	5.0045	7.1897	4.6056
7	6.4315	-5.9206	-0.6149	0.5276	0.4203	0.8311	8.2028	6.5356	12.9225
8	7.0937	-4.9633	-1.5688	0.6578	0.9435	1.0692	9.2730	13.3006	15.0722
9	6.9755	-4.8731	-1.2354	0.5587	0.6170	1.3300	8.0097	8.8451	19.0670
10	7.3091	-5.3693	-2.0315	0.5464	0.4791	0.3967	7.4756	6.5547	5.4278

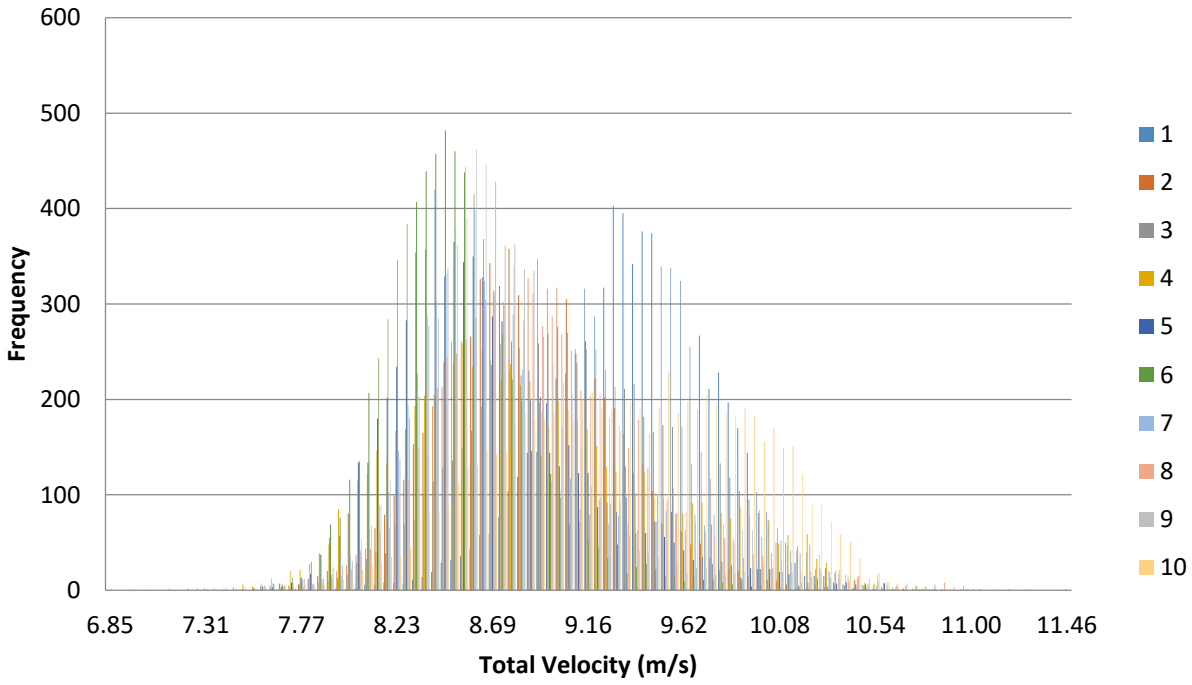


Figure 1. Velocity histogram for each interval (100 bins).

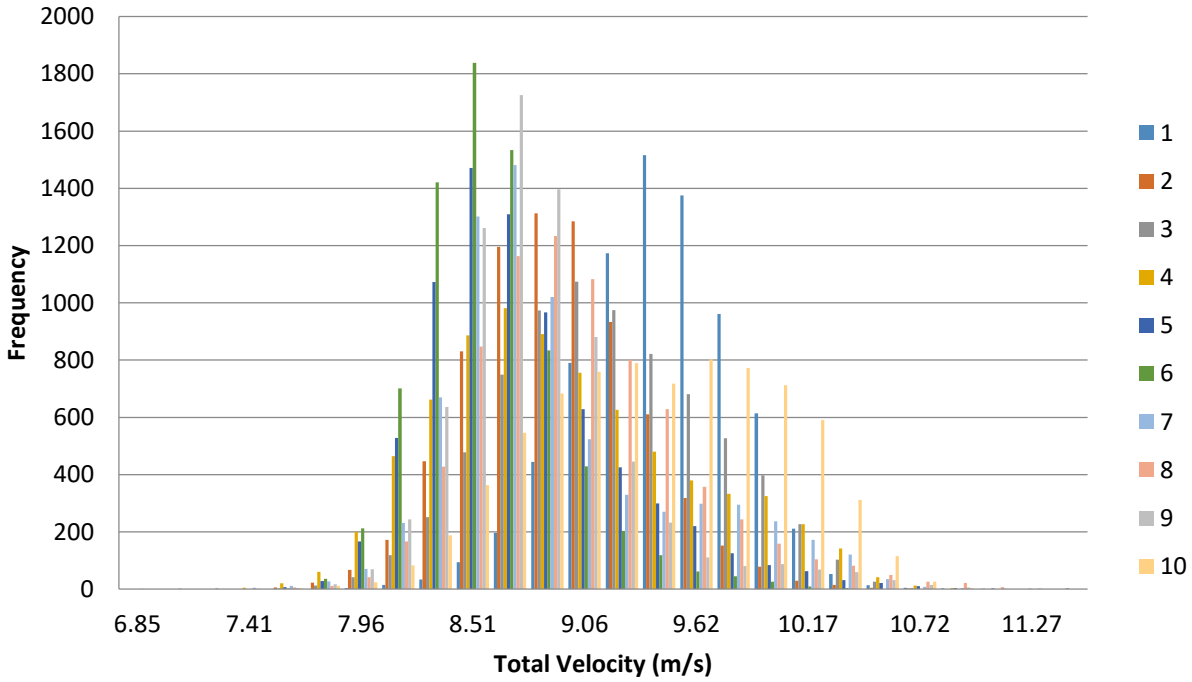
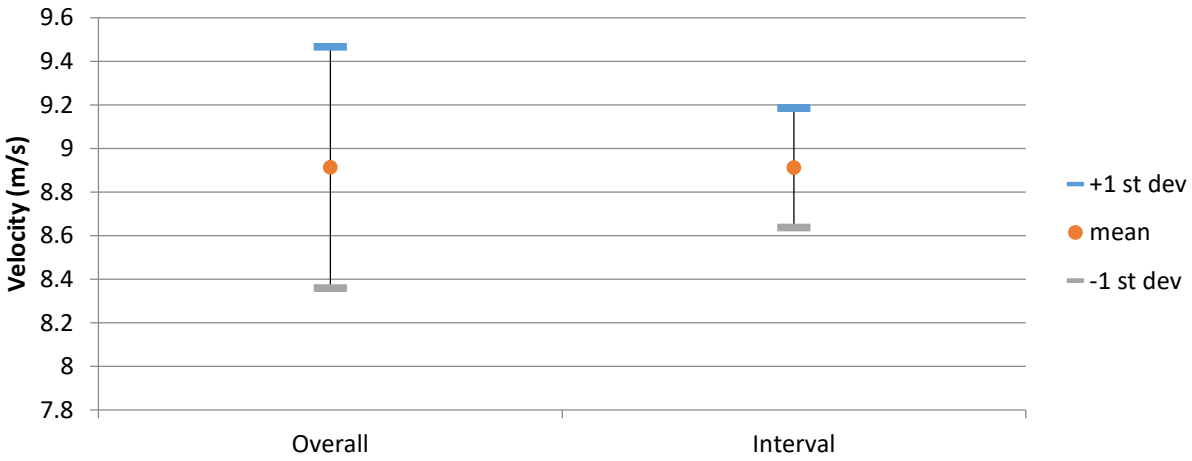
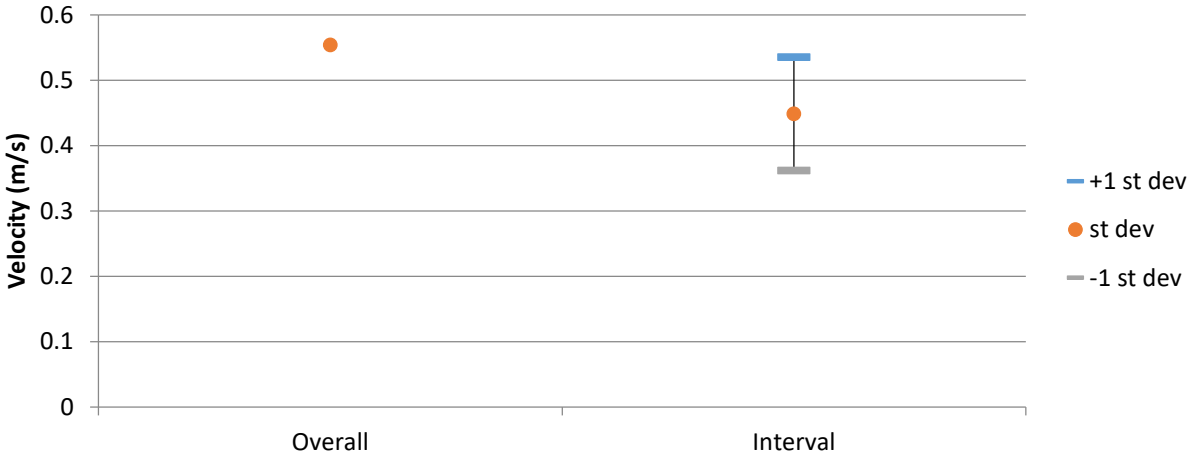


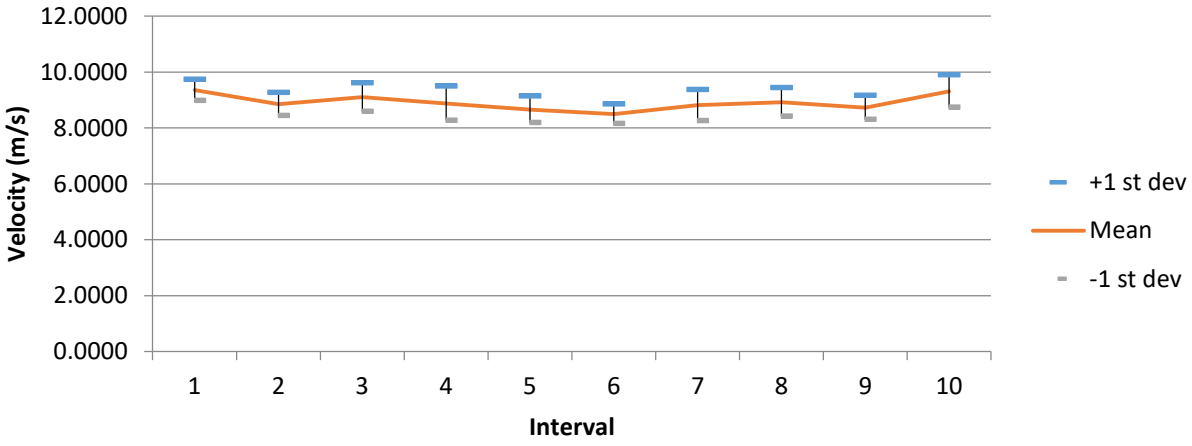
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 127
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: B2
First Sample Date: 14-Aug-13
First Sample Time: 09:24:11.609

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.7981	7.2883	9.3173	0.5763
u	10.2000	4.8200	7.2737	0.8278
v	-1.3000	-8.6400	-4.7488	0.9611
w	0.9320	-6.4500	-3.0673	0.8174

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	11.8800	8.6877	9.8136	0.6121	6.2369	17	0.14 %
2	11.3040	8.4454	9.6891	0.5801	5.9874	1	0.01 %
3	10.6562	8.0553	9.0756	0.3308	3.6446	16	0.13 %
4	12.7981	8.2443	9.8442	0.6106	6.2025	46	0.37 %
5	11.3305	7.2883	8.9669	0.5743	6.4047	1117	8.94 %
6	10.0400	8.2327	9.0132	0.2316	2.5696	0	0.00 %
7	10.5930	8.4675	9.1774	0.2607	2.8412	0	0.00 %
8	11.9587	7.3675	9.4256	0.4903	5.2021	477	3.82 %
9	10.8333	8.0501	9.0375	0.4587	5.0751	122	0.98 %
10	10.7404	8.0477	9.0834	0.3738	4.1153	21	0.17 %
		Average	9.3126	0.4523	4.8279		
		St dev	0.3317	0.1377	1.3734		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	7.2315	-5.8083	-3.0393	0.6306	0.7427	0.6805	8.7197	10.2709	9.4103
2	7.6680	-5.1371	-2.8155	0.7123	0.4654	0.6136	9.2899	6.0697	8.0022
3	7.2441	-3.7221	-3.7848	0.7821	0.8367	0.7137	10.7966	11.5508	9.8523
4	8.1689	-4.3028	-3.1877	0.7295	0.9827	0.6147	8.9302	12.0296	7.5253
5	6.2466	-5.3465	-3.4218	0.6713	0.7686	0.6154	10.7474	12.3048	9.8518
6	7.3022	-3.6916	-3.6574	0.4473	0.5061	0.7128	6.1259	6.9310	9.7610
7	7.5623	-4.3414	-2.8034	0.3613	0.3447	0.3838	4.7773	4.5583	5.0752
8	7.3234	-5.4026	-2.0053	0.8202	0.8585	0.9118	11.1990	11.7231	12.4507
9	6.8714	-4.9752	-2.9416	0.7923	0.4821	0.6372	11.5305	7.0161	9.2740
10	6.9673	-4.8927	-3.0020	0.7004	0.4613	0.6714	10.0528	6.6216	9.6366

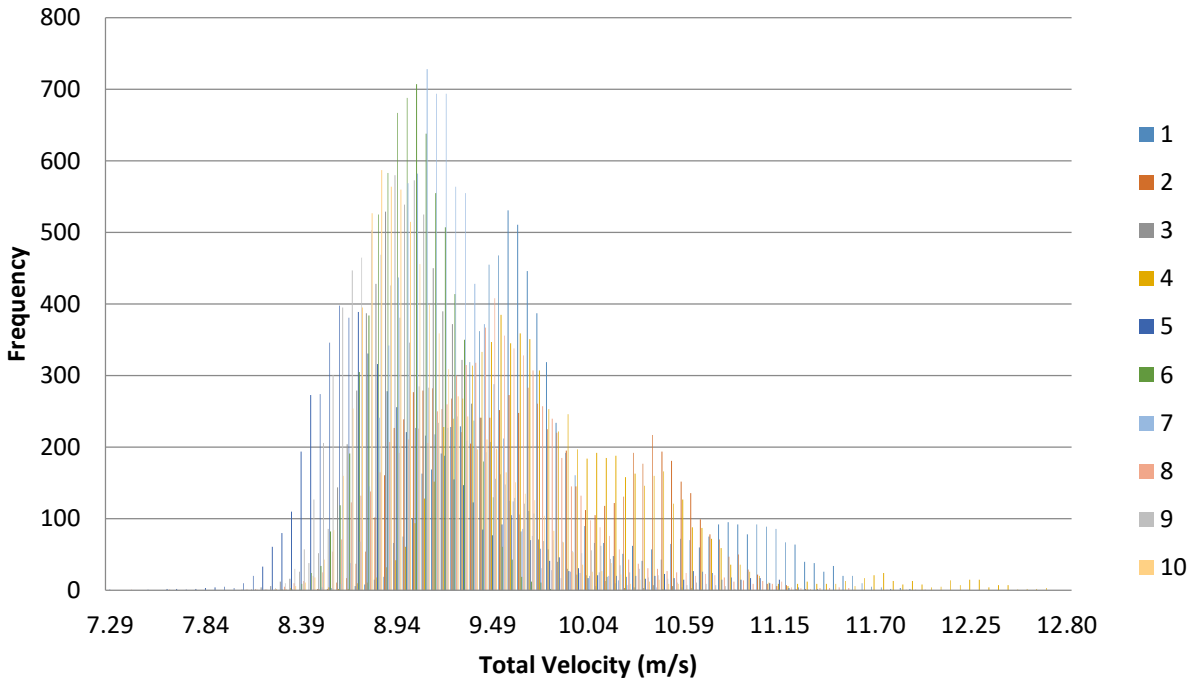


Figure 1. Velocity histogram for each interval (100 bins).

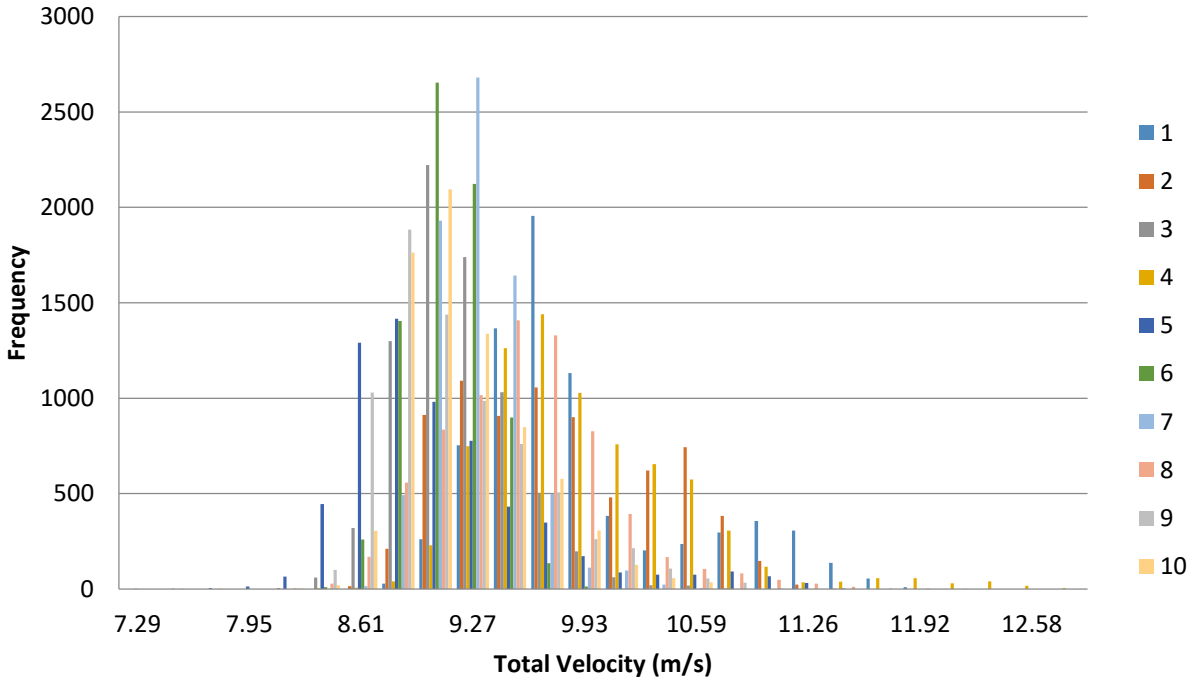
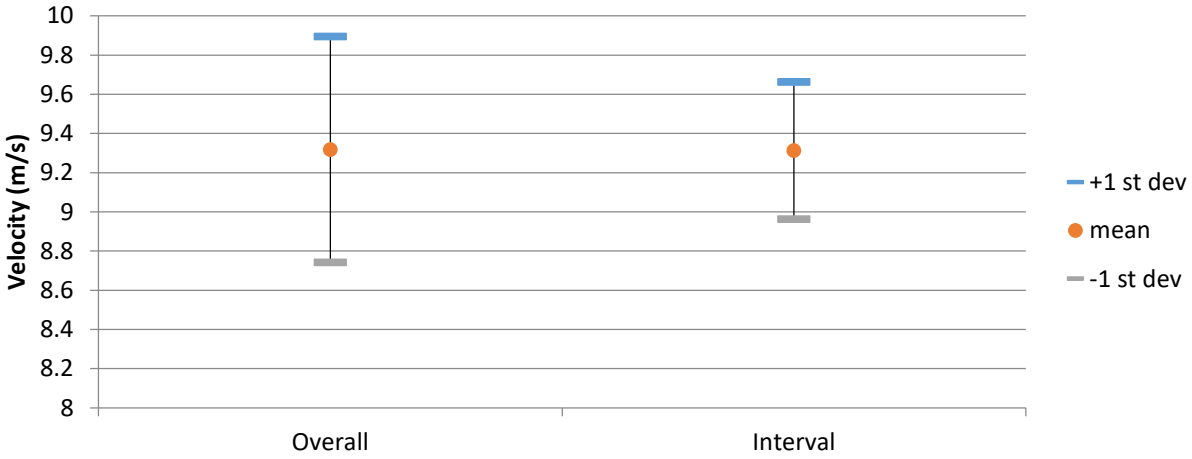
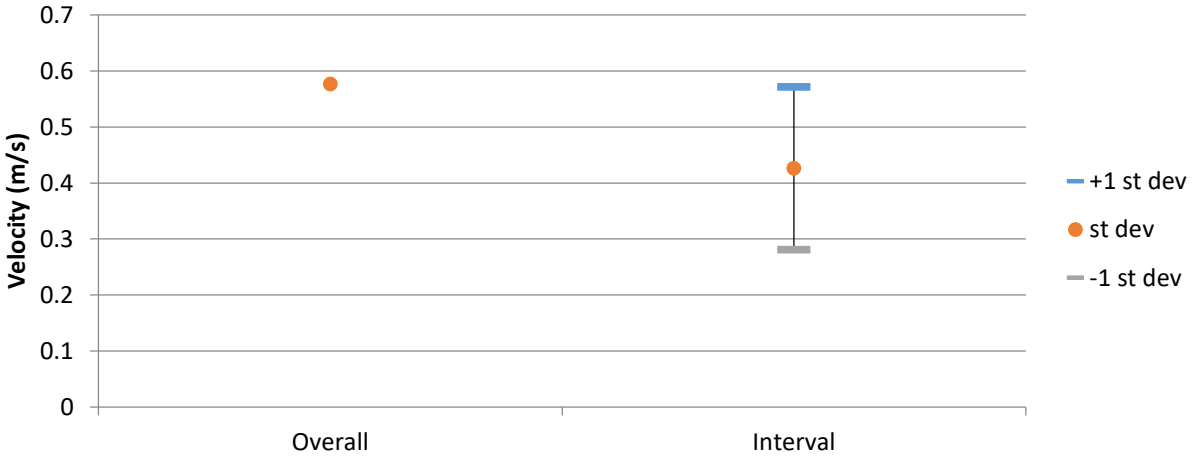


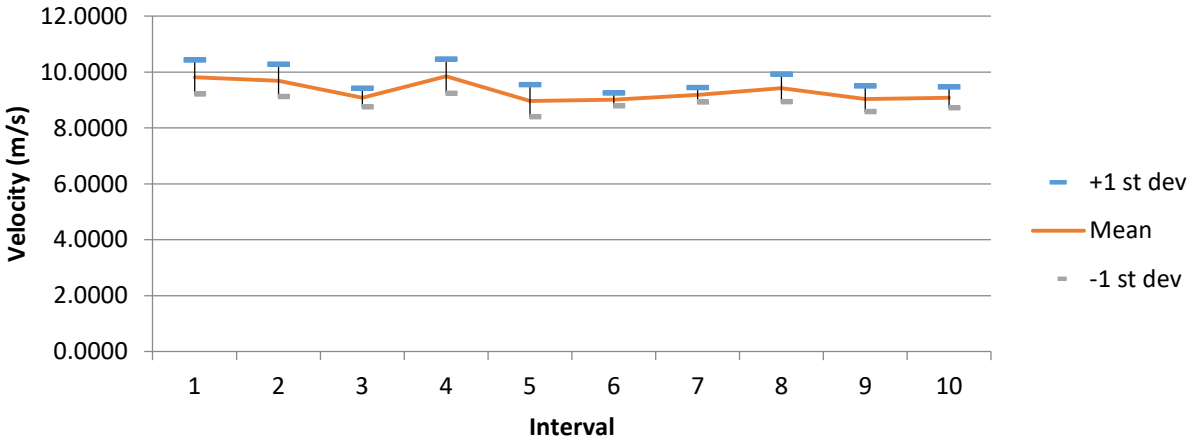
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 128
Blockage Condition: Existing Buildings
Blower Frequency: 50 Hz
Inlet Probe Location: A2
First Sample Date: 14-Aug-13
First Sample Time: 09:25:57.140

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.2377	6.8874	8.5304	0.5086
u	8.0000	4.8100	6.6892	0.5229
v	-3.3100	-7.1200	-4.9809	0.4671
w	1.7900	-3.5200	-1.5719	0.7135

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	9.6791	7.4668	8.9687	0.3129	3.4888	6	0.05 %
2	9.7012	7.0916	8.5867	0.4875	5.6779	0	0.00 %
3	9.7038	7.0149	8.4389	0.4612	5.4654	0	0.00 %
4	10.1003	7.7588	8.8659	0.4457	5.0269	0	0.00 %
5	10.2377	7.0906	8.1170	0.3584	4.4155	61	0.49 %
6	9.8513	7.8828	8.9173	0.3600	4.0373	0	0.00 %
7	9.4745	7.3712	8.6106	0.3168	3.6792	0	0.00 %
8	9.6582	7.1020	8.2492	0.4401	5.3355	25	0.20 %
9	10.0638	6.9255	8.3434	0.4707	5.6419	3	0.02 %
10	9.2475	6.8874	8.2015	0.4490	5.4741	20	0.16 %
		Average	8.5299	0.4102	4.8242		
		St dev	0.2942	0.0627	0.8009		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	7.0673	-5.1866	-1.8383	0.3862	0.2693	0.2953	5.4646	3.8106	4.1786
2	6.7201	-5.1765	-1.2123	0.4499	0.3149	0.4921	6.6954	4.6855	7.3222
3	6.6381	-4.8471	-1.7288	0.4685	0.4440	0.6802	7.0571	6.6890	10.2462
4	6.8302	-5.2733	-1.9332	0.4507	0.3327	0.5415	6.5984	4.8710	7.9284
5	6.1464	-5.2595	-0.2527	0.4335	0.3239	0.4656	7.0526	5.2693	7.5750
6	6.9815	-5.3191	-1.4595	0.3809	0.2879	0.5071	5.4563	4.1231	7.2638
7	6.8972	-4.8078	-1.7881	0.3224	0.2827	0.4178	4.6745	4.0983	6.0577
8	6.4622	-4.6373	-2.0609	0.5519	0.4870	0.4350	8.5403	7.5356	6.7313
9	6.7358	-4.6393	-1.4098	0.4512	0.5438	0.6736	6.6986	8.0735	10.0000
10	6.4076	-4.6633	-2.0278	0.5431	0.4008	0.3102	8.4761	6.2551	4.8409

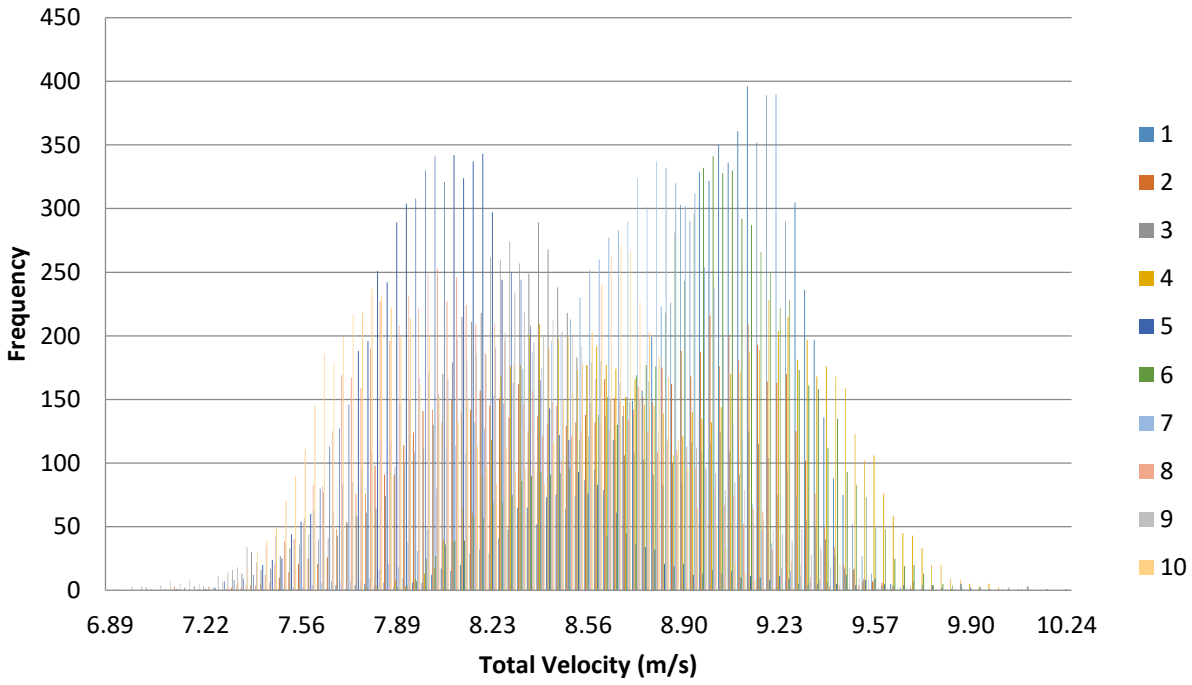


Figure 1. Velocity histogram for each interval (100 bins).

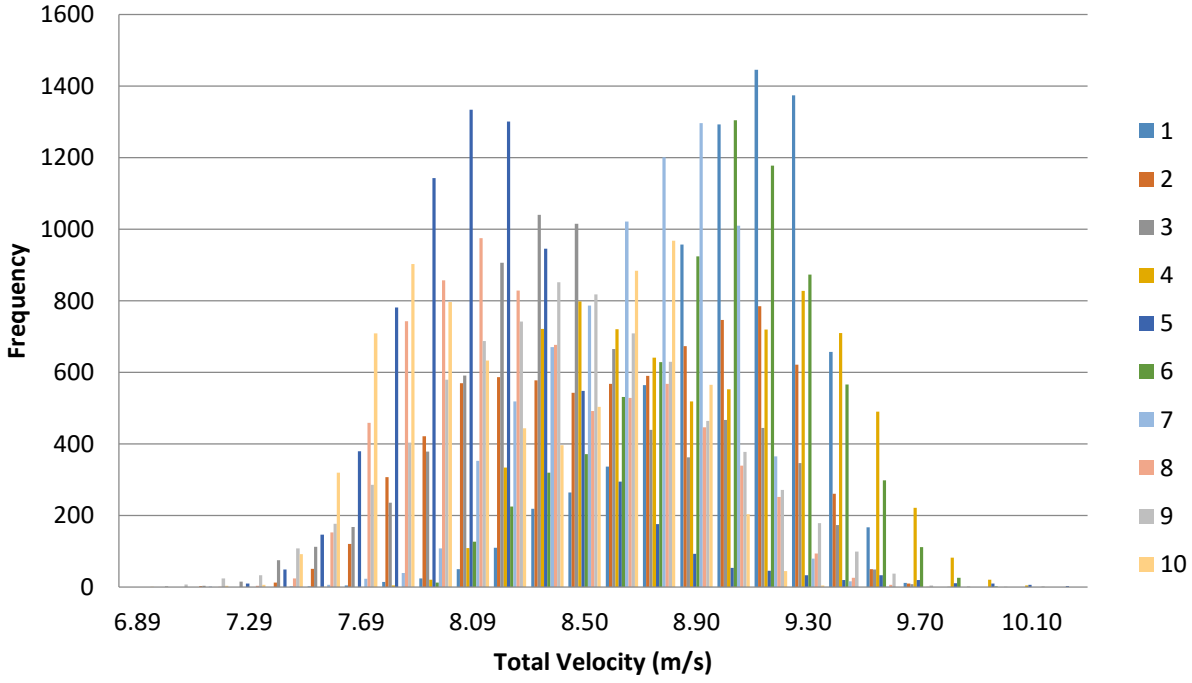
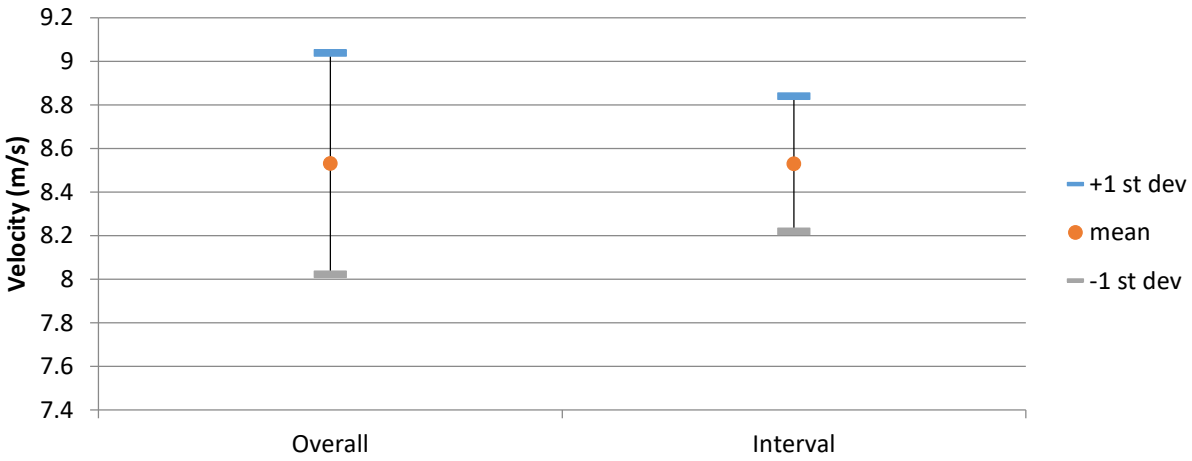
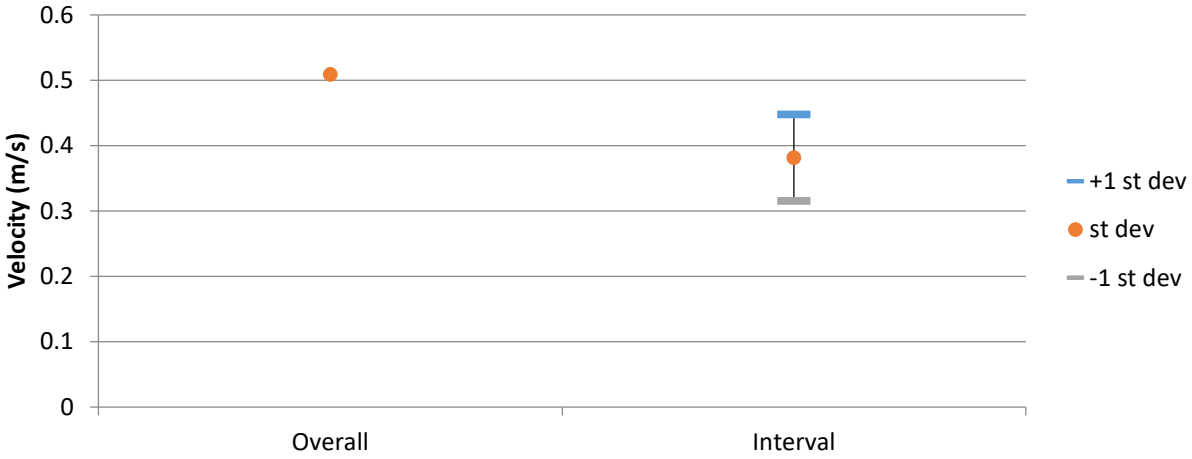


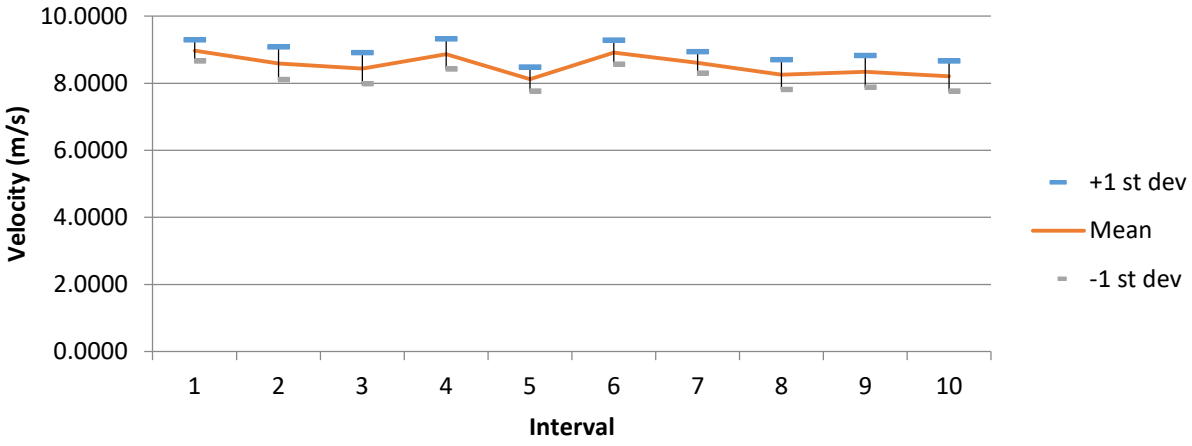
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 129
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: A3
First Sample Date: 14-Aug-13
First Sample Time: 09:27:21.671

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.7805	6.2431	8.6035	0.5838
u	8.3500	4.4900	6.4352	0.5575
v	-4.0000	-7.1200	-5.5429	0.3806
w	0.3760	-3.4900	-1.1448	0.6784

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	10.1678	7.1384	8.7555	0.5505	6.2875	1	0.01 %
2	10.1884	6.2431	8.4473	0.6543	7.7457	667	5.34 %
3	10.7805	6.4307	9.1807	0.6027	6.5646	492	3.94 %
4	10.5292	7.8243	9.0474	0.4795	5.3002	0	0.00 %
5	10.3543	7.3823	8.6015	0.4420	5.1384	0	0.00 %
6	9.2722	7.1854	8.0264	0.2222	2.7686	0	0.00 %
7	10.1677	7.3722	8.3859	0.4140	4.9364	0	0.00 %
8	10.1028	7.3963	8.3041	0.3485	4.1969	0	0.00 %
9	10.2125	7.0974	8.7815	0.5134	5.8463	2	0.02 %
10	10.0112	7.1122	8.5288	0.4810	5.6402	0	0.00 %
		Average	8.6059	0.4708	5.4425		
		St dev	0.3294	0.1184	1.2865		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	6.5501	-5.6373	-1.2845	0.4842	0.3321	0.5345	7.3921	5.0704	8.1597
2	6.0931	-5.3324	-2.3010	0.7675	0.4017	0.4239	12.5957	6.5926	6.9565
3	6.8592	-5.8376	-1.6339	0.6777	0.3354	0.5309	9.8806	4.8892	7.7406
4	6.8011	-5.8472	-1.1194	0.4100	0.2811	0.3750	6.0286	4.1330	5.5139
5	6.3523	-5.7392	-0.7295	0.3309	0.3735	0.3316	5.2095	5.8795	5.2206
6	6.0539	-5.2492	-0.3510	0.2488	0.1832	0.2243	4.1095	3.0265	3.7055
7	6.2823	-5.4890	-0.7902	0.3587	0.2378	0.3000	5.7095	3.7845	4.7758
8	6.0436	-5.6534	-0.5710	0.3165	0.2302	0.3395	5.2365	3.8084	5.6181
9	6.7047	-5.4594	-1.4338	0.4835	0.3379	0.4663	7.2110	5.0395	6.9555
10	6.6089	-5.1852	-1.3680	0.4522	0.3004	0.4916	6.8428	4.5449	7.4385

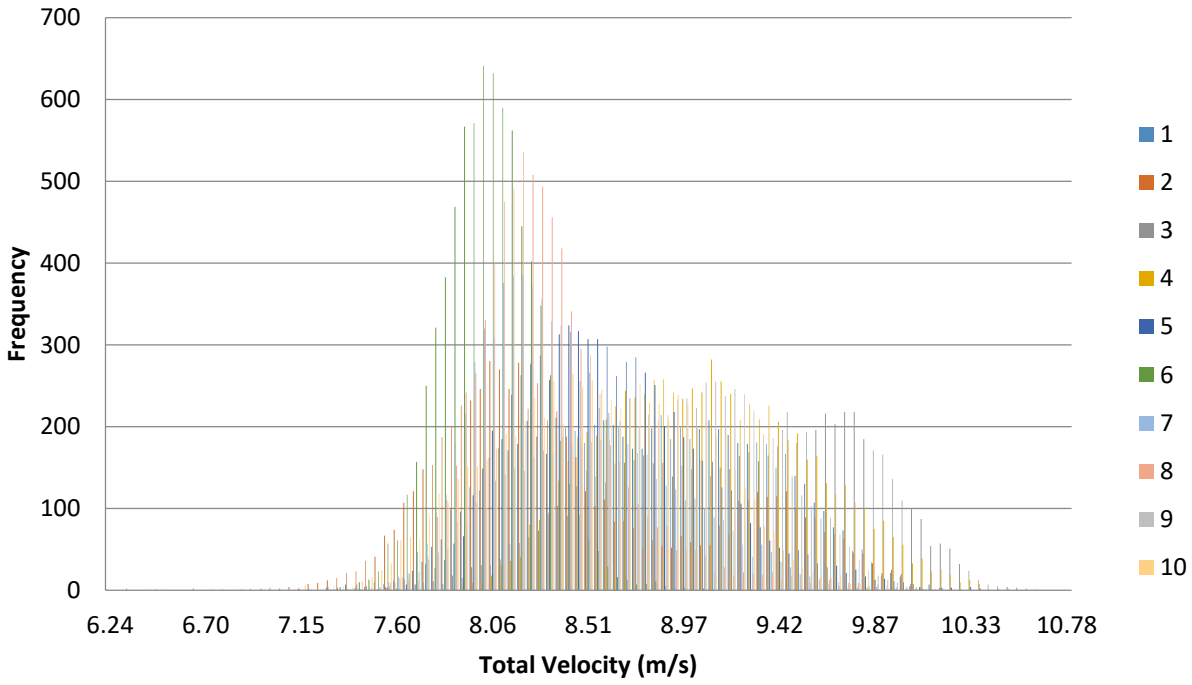


Figure 1. Velocity histogram for each interval (100 bins).

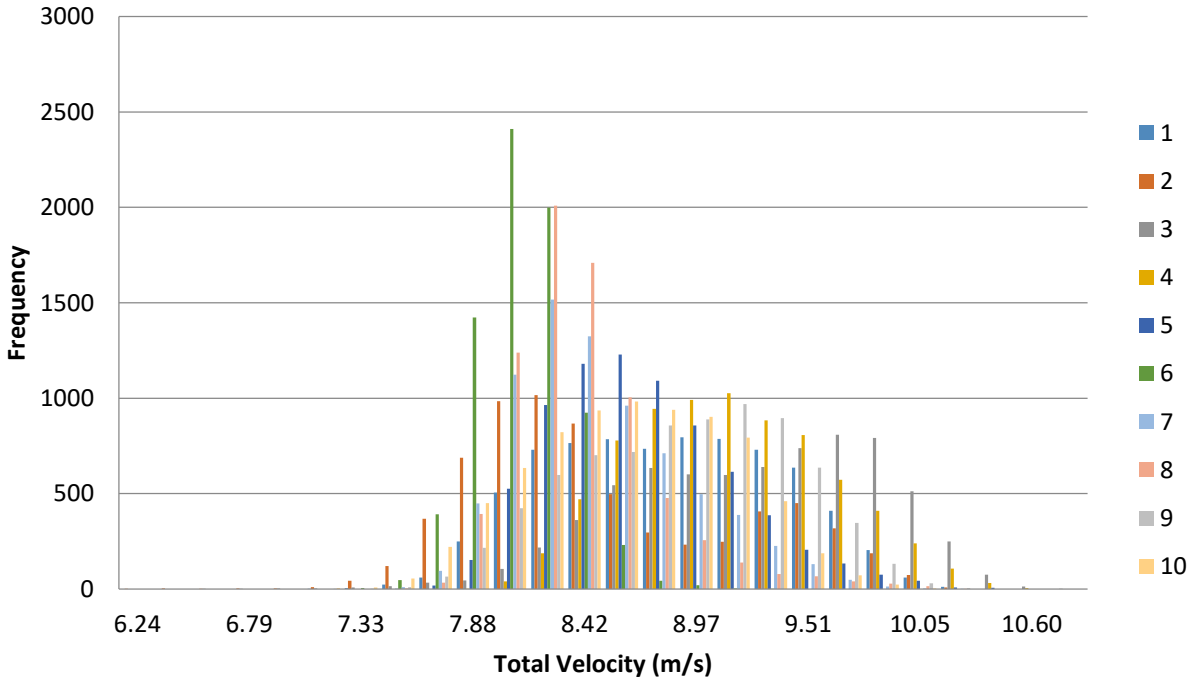
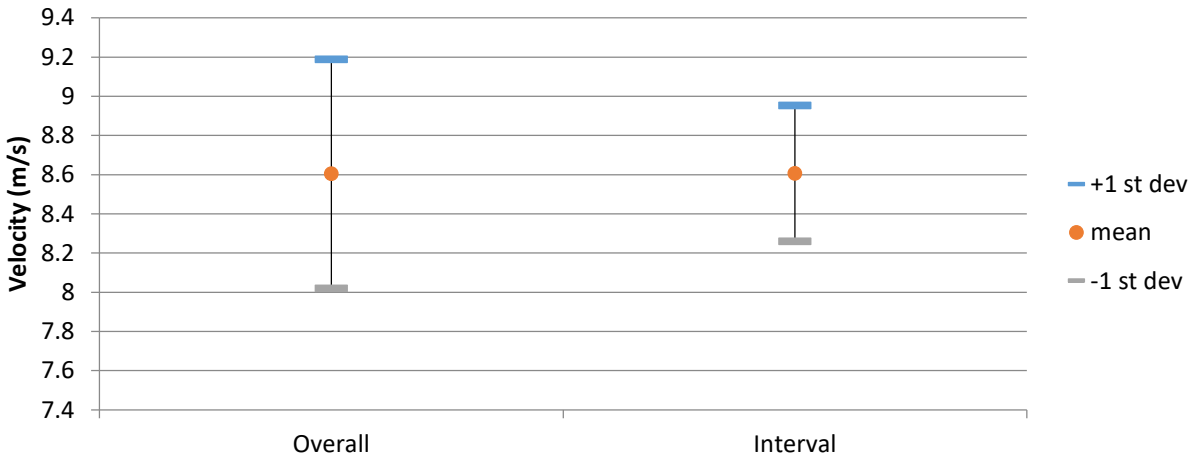
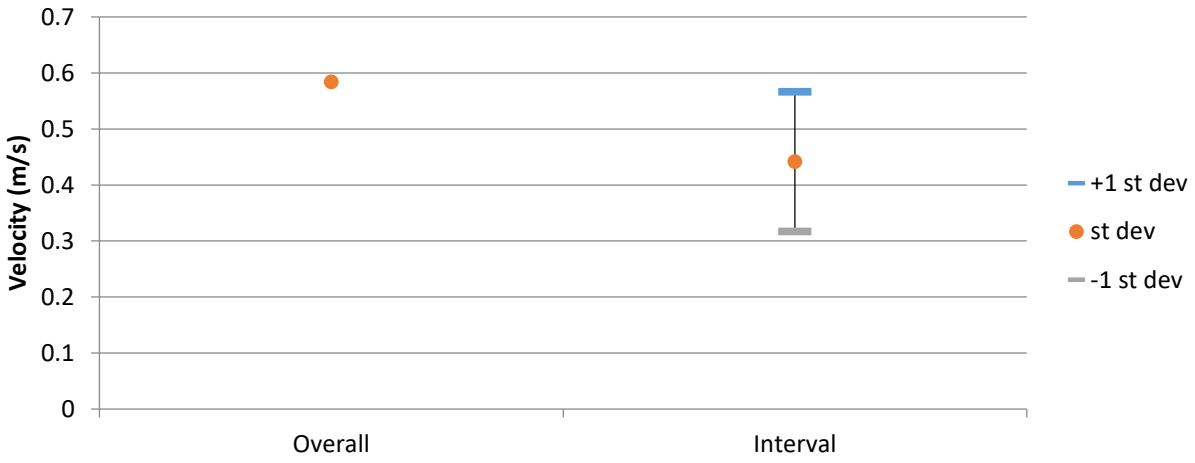


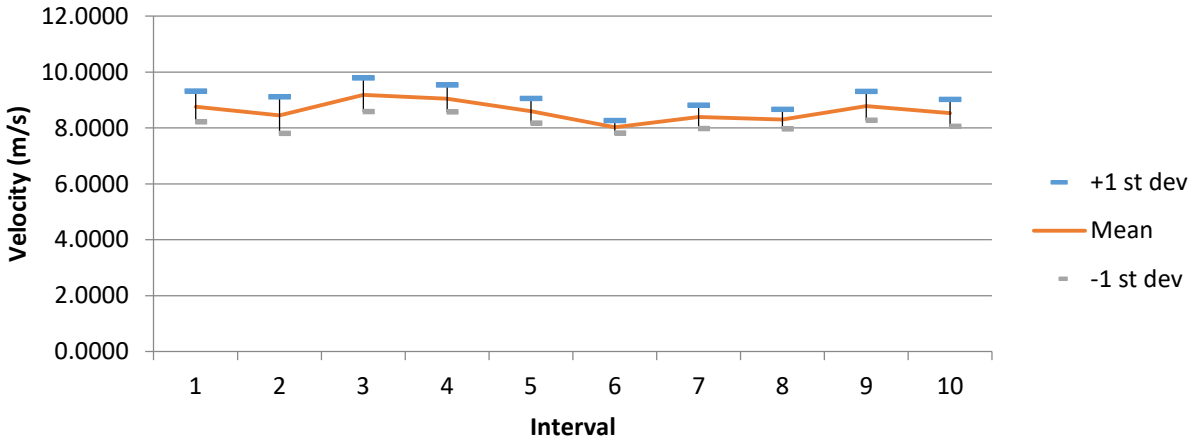
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 130
Blockage Condition: Existing Building.
Blower Frequency: 50 Hz
Inlet Probe Location: A4
First Sample Date: 14-Aug-13
First Sample Time: 09:29:25.546

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.8618	5.9292	8.0062	0.3763
u	8.6400	4.2500	6.1870	0.4755
v	-0.8650	-7.2700	-4.9812	0.5811
w	4.8100	-3.0400	-0.0880	0.7604

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	8.5178	7.1418	7.8262	0.1619	2.0689	0	0.00 %
2	8.5498	7.2681	7.8494	0.1929	2.4570	0	0.00 %
3	9.7031	7.0158	8.0970	0.3101	3.8303	1	0.01 %
4	10.8618	6.9942	8.2734	0.2905	3.5107	78	0.62 %
5	10.3507	7.3413	8.0492	0.3457	4.2947	10	0.08 %
6	9.4757	7.2506	7.8703	0.2192	2.7846	0	0.00 %
7	8.7769	7.0663	7.8409	0.2195	2.7999	0	0.00 %
8	9.0473	6.6447	7.8491	0.3486	4.4415	0	0.00 %
9	10.6772	5.9292	8.3975	0.5621	6.6932	3363	26.90 %
10	9.9320	6.3963	8.1914	0.5227	6.3811	154	1.23 %
		Average	8.0244	0.3173	3.9262		
		St dev	0.1982	0.1279	1.4982		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.8490	-5.1805	-0.2972	0.2460	0.1457	0.2401	4.2058	2.4915	4.1048
2	6.0247	-5.0125	-0.3300	0.2744	0.1324	0.1644	4.5538	2.1976	2.7293
3	6.0548	-5.3507	-0.2688	0.3065	0.2312	0.3849	5.0619	3.8177	6.3563
4	6.3780	-5.1783	0.5080	0.4688	0.4155	0.6236	7.3499	6.5141	9.7778
5	6.1308	-5.1802	-0.3801	0.3409	0.2955	0.3753	5.5607	4.8205	6.1222
6	6.0217	-5.0548	-0.2138	0.2888	0.1344	0.1737	4.7961	2.2317	2.8838
7	6.0181	-5.0134	-0.0085	0.3184	0.1855	0.2018	5.2910	3.0821	3.3527
8	6.6886	-3.8570	0.4782	0.5849	0.9013	0.8571	8.7450	13.4753	12.8148
9	6.2785	-5.1947	0.3313	0.5721	0.6662	1.8837	9.1113	10.6104	30.0030
10	6.4753	-4.8858	-0.5145	0.5449	0.4467	0.9004	8.4149	6.8984	13.9054

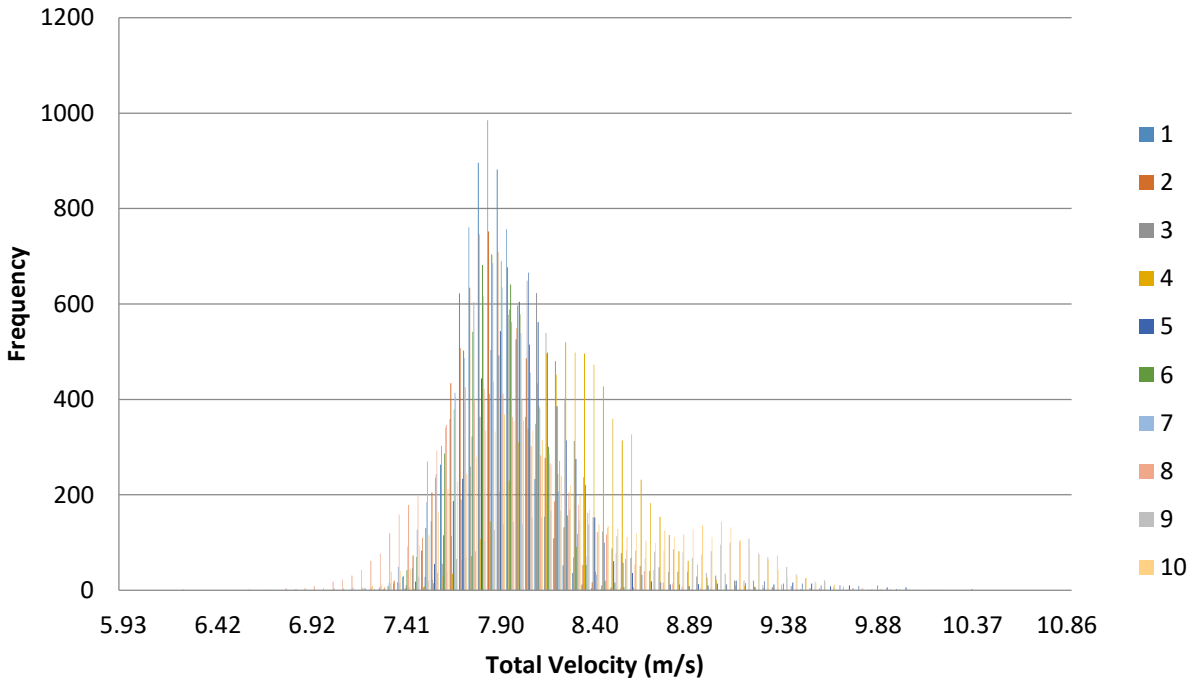


Figure 1. Velocity histogram for each interval (100 bins).

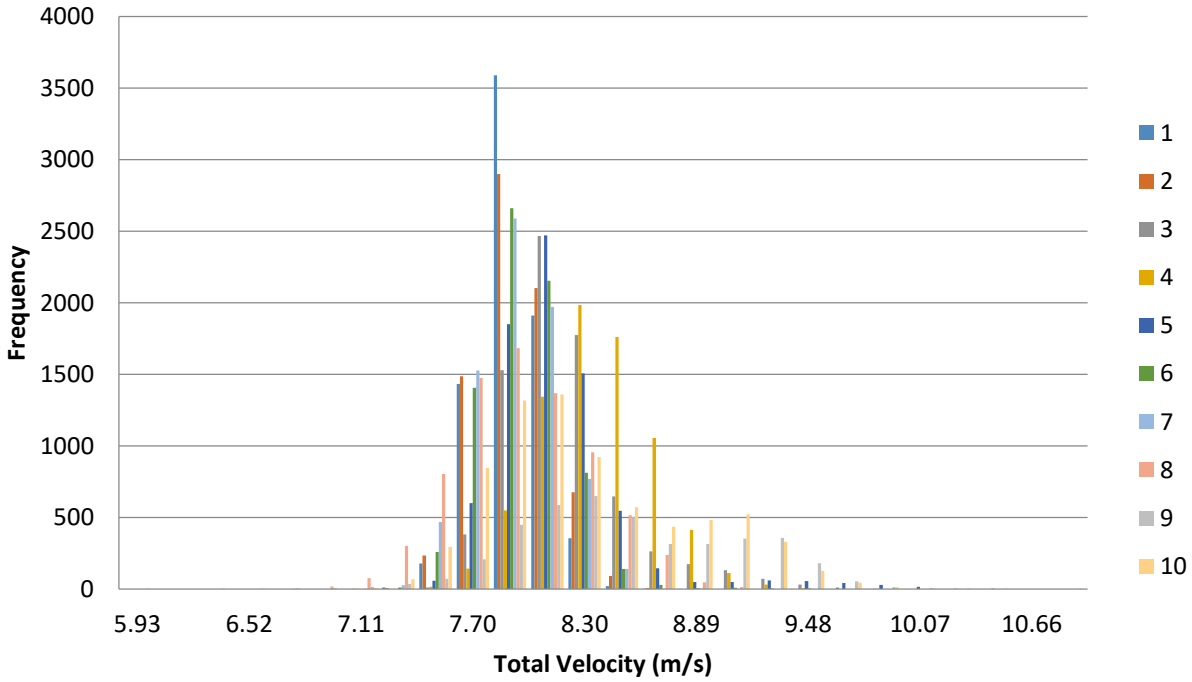
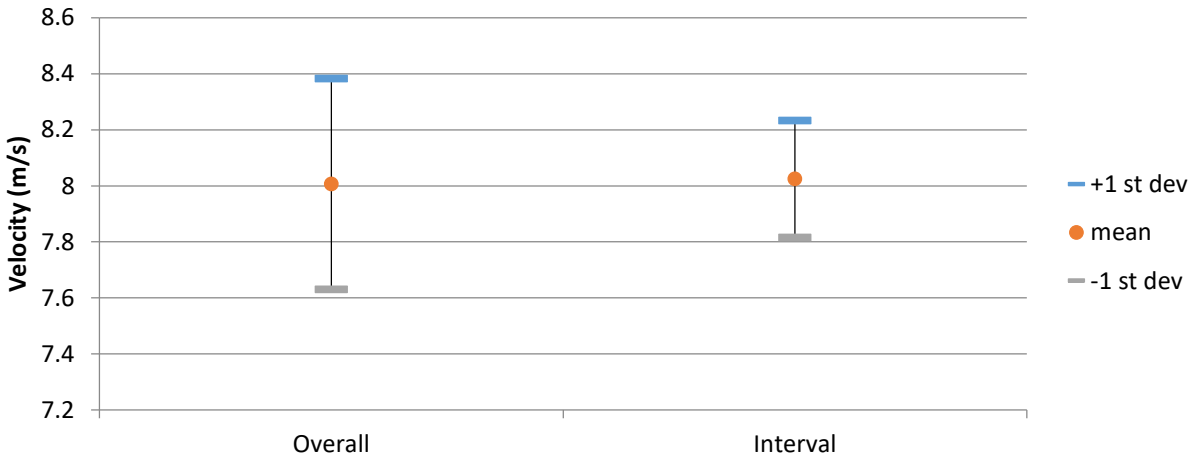
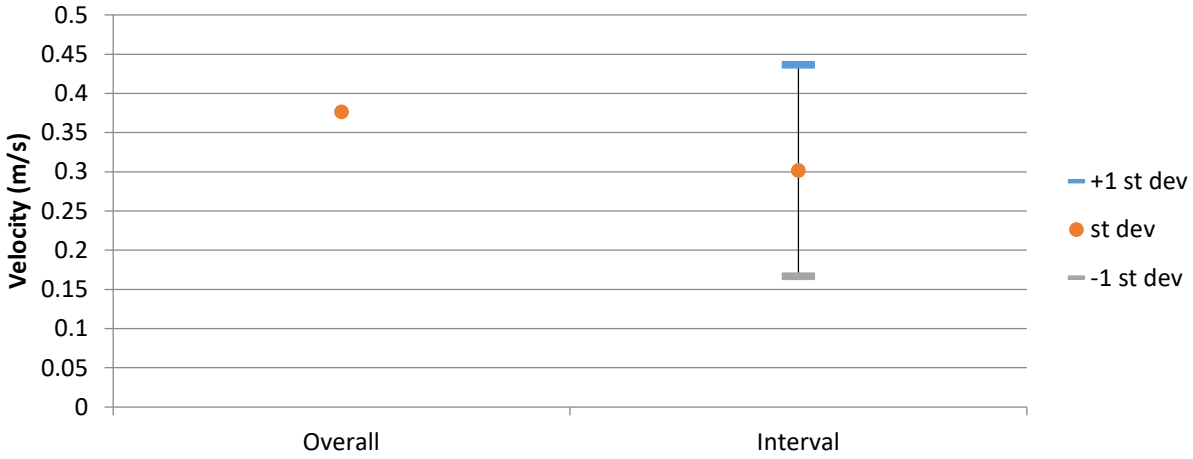


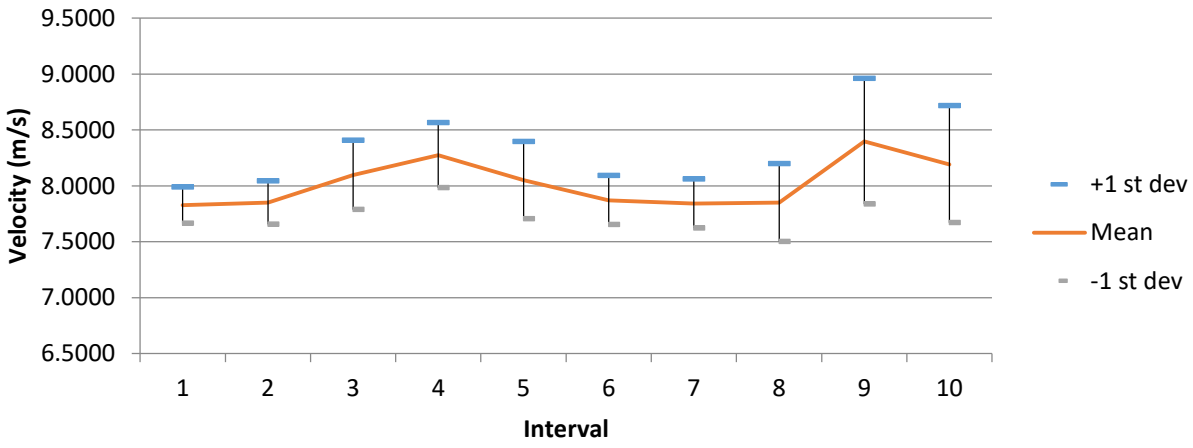
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 131
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: A5
First Sample Date: 14-Aug-13
First Sample Time: 09:30:56.671

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.8204	6.1659	8.2337	0.4537
u	8.4200	4.2100	6.0641	0.4647
v	-3.1300	-7.3900	-5.4853	0.5216
w	2.2200	-4.5100	-0.2404	0.7694

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	10.0756	6.2362	8.4820	0.5545	6.5374	432	3.46 %
2	10.7503	6.1659	8.6451	0.6023	6.9674	1091	8.73 %
3	10.8204	6.1913	8.1344	0.5031	6.1849	1229	9.83 %
4	10.1254	6.3161	8.0772	0.4555	5.6396	417	3.34 %
5	10.4237	6.8991	8.2150	0.3888	4.7324	377	3.02 %
6	9.4713	7.1620	8.1741	0.2436	2.9799	680	5.44 %
7	9.6538	7.7316	8.4265	0.1869	2.2177	874	6.99 %
8	9.4578	7.1735	8.1558	0.2894	3.5483	336	2.69 %
9	10.1899	6.8563	8.1006	0.3609	4.4550	144	1.15 %
10	9.7113	7.0078	7.9826	0.3239	4.0577	84	0.67 %
		Average	8.2393	0.3909	4.7320		
		St dev	0.1982	0.1293	1.5005		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	6.2707	-5.5220	-1.2349	0.5512	0.4316	0.6501	8.7906	6.8834	10.3674
2	6.3071	-5.7062	-1.2832	0.6116	0.4471	0.7345	9.6967	7.0892	11.6454
3	5.7956	-5.6562	-0.3776	0.3830	0.4635	0.5789	6.6079	7.9972	9.9879
4	6.1535	-5.1493	0.1434	0.5041	0.6319	0.6273	8.1922	10.2693	10.1947
5	6.0571	-5.4903	-0.0265	0.4019	0.5158	0.6140	6.6357	8.5148	10.1376
6	5.8433	-5.6853	0.2862	0.3171	0.3109	0.3594	5.4264	5.3210	6.1513
7	5.9103	-5.9927	0.0448	0.2213	0.1994	0.3240	3.7438	3.3744	5.4819
8	6.1741	-5.2838	0.1215	0.4104	0.4736	0.3951	6.6478	7.6714	6.3992
9	6.1030	-5.2680	-0.1392	0.4392	0.5027	0.5343	7.1959	8.2376	8.7546
10	6.0007	-5.2040	-0.0363	0.3885	0.4187	0.6397	6.4737	6.9775	10.6602

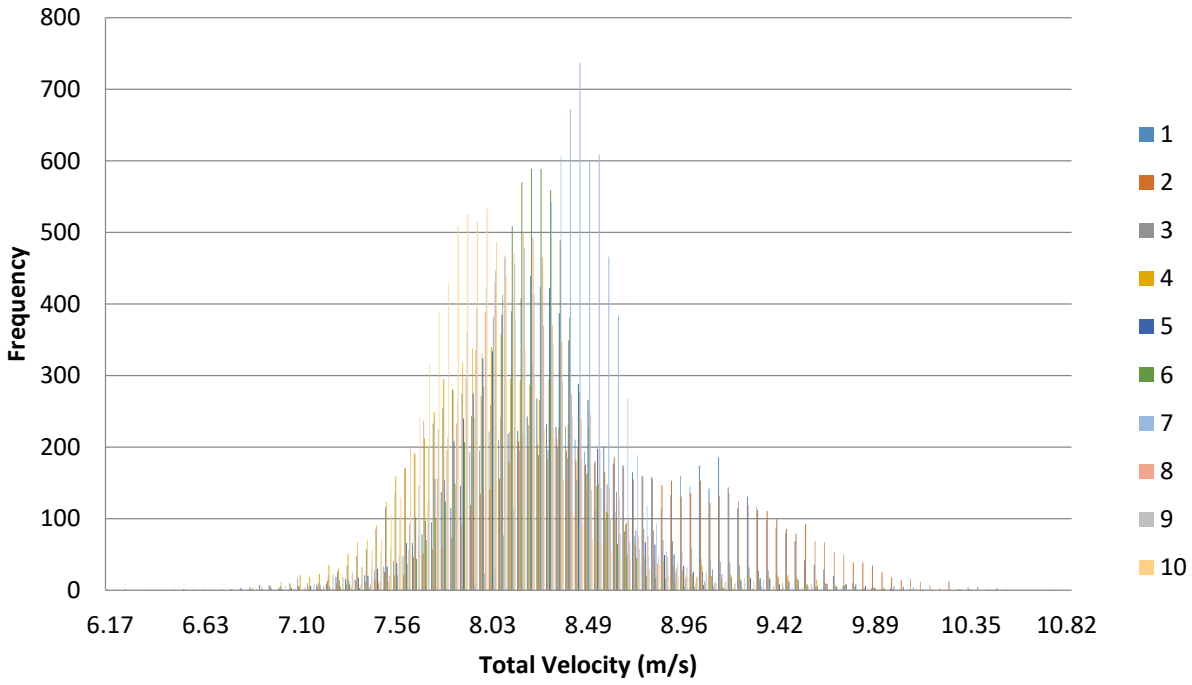


Figure 1. Velocity histogram for each interval (100 bins).

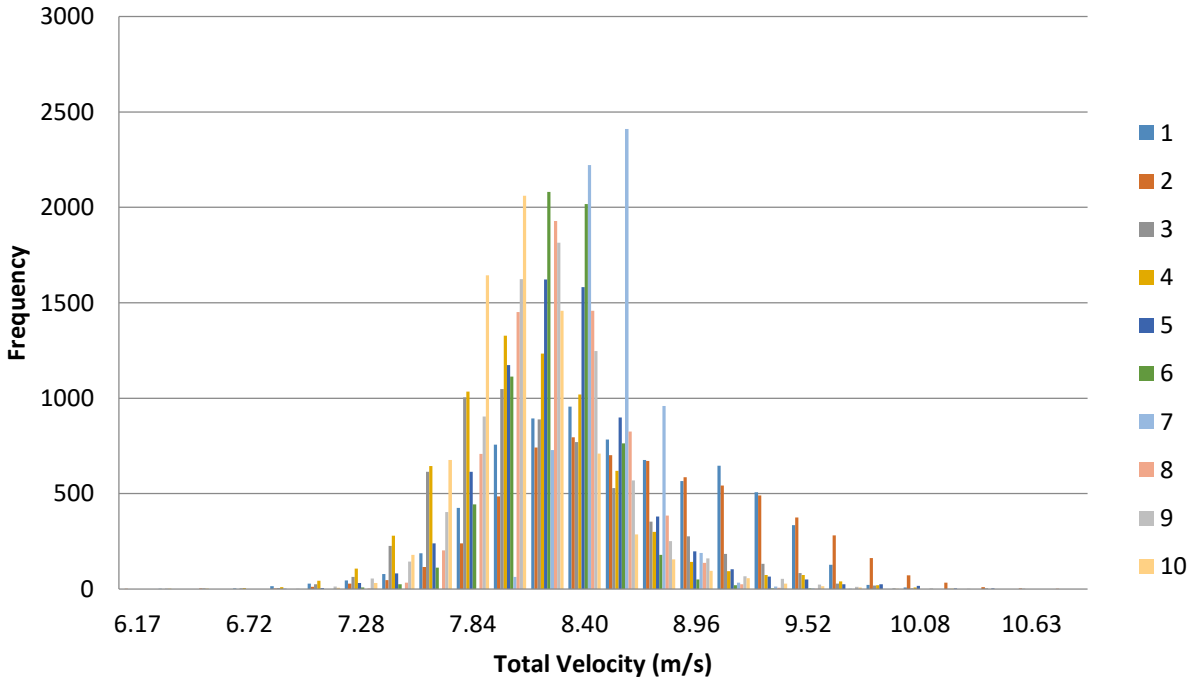
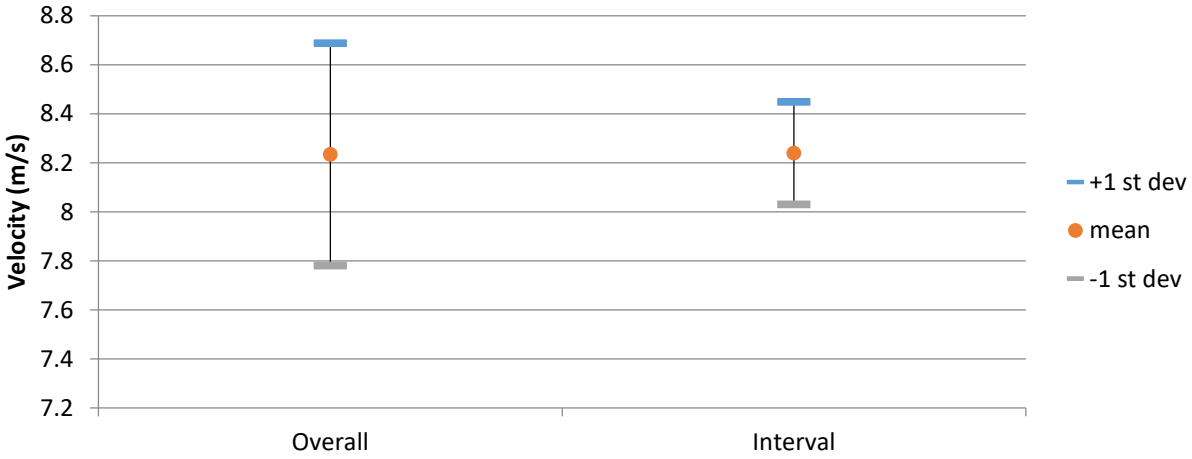
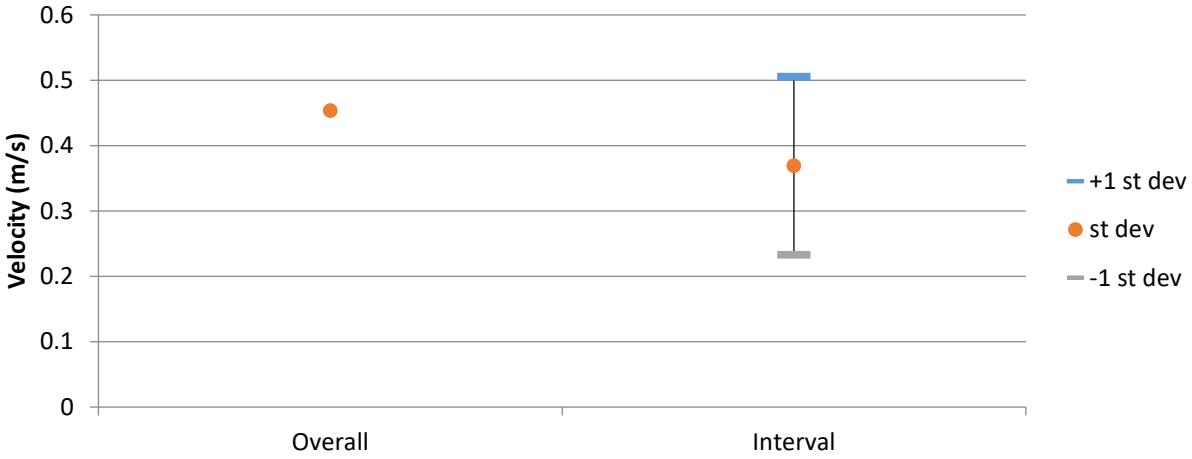


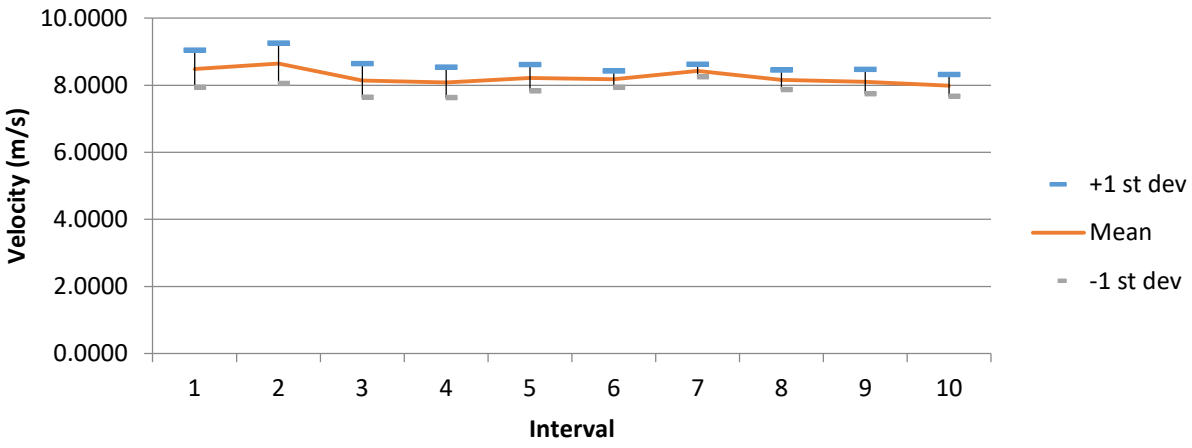
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 132
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 14-Aug-13
First Sample Time: 09:33:00.187

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	13.4437	9.5833	11.1395	0.3238
u	12.3000	8.0300	10.5214	0.4571
v	3.0200	-6.3300	-0.9030	1.2743
w	0.8260	-6.7600	-3.0802	1.1661

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.7077	10.3892	11.0338	0.1851	1.9733
2	12.2159	10.3332	11.0228	0.2175	1.8333
3	12.3022	10.2122	11.1176	0.2038	1.4527
4	11.6896	10.4321	10.9533	0.1591	1.6330
5	11.7267	10.3848	11.0496	0.1804	1.9120
6	11.7056	9.9390	11.0728	0.2117	2.7883
7	12.4387	10.2863	11.2112	0.3126	3.2216
8	13.4141	9.5833	11.6054	0.3739	3.1416
9	13.4437	9.8383	11.1659	0.3508	3.6568
10	13.2149	10.2238	11.1631	0.4082	2.3369
		Average	11.1395	0.2603	2.3950
		St Dev	0.1813	0.0915	0.7202

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.7084	-0.1165	-2.5614	0.1769	0.4415	0.5564	1.6524	4.1233	5.1960
2	10.6803	-0.2997	-2.4482	0.1829	0.8886	0.7570	1.7126	8.3197	7.0879
3	10.4859	-1.2202	-3.3621	0.2342	0.6704	0.6256	2.2333	6.3933	5.9658
4	10.6374	-0.1837	-2.5516	0.1596	0.4099	0.3273	1.5006	3.8530	3.0765
5	10.7397	-0.3278	-2.4462	0.1717	0.5325	0.6173	1.5989	4.9582	5.7480
6	10.4878	-1.0558	-3.2256	0.3031	0.6203	0.8142	2.8898	5.9144	7.7632
7	10.9312	0.0739	-1.9703	0.3407	0.9498	1.1800	3.1164	8.6885	10.7945
8	10.7695	-2.9609	-2.7963	0.5456	0.9895	0.9898	5.0658	9.1879	9.1906
9	9.9040	-1.8258	-4.6700	0.3396	1.0465	0.5977	3.4287	10.5665	6.0348
10	9.8692	-1.1133	-4.7699	0.3669	1.7192	0.5458	3.7180	17.4194	5.5307

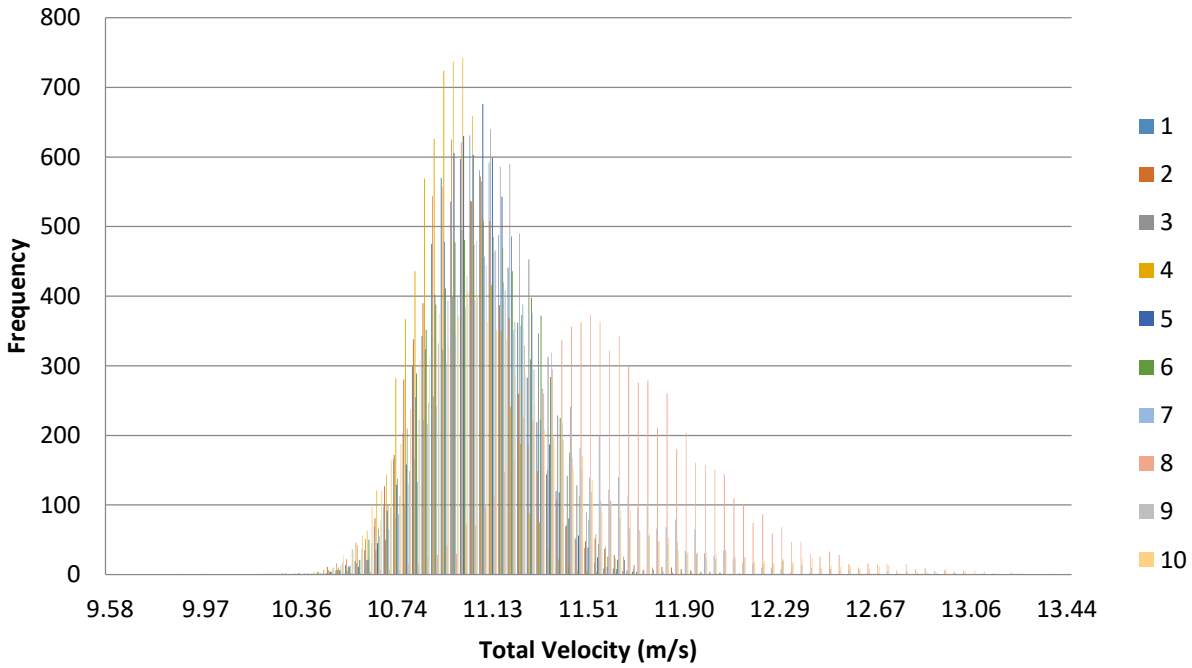


Figure 1. Velocity histogram for each interval (100 bins).

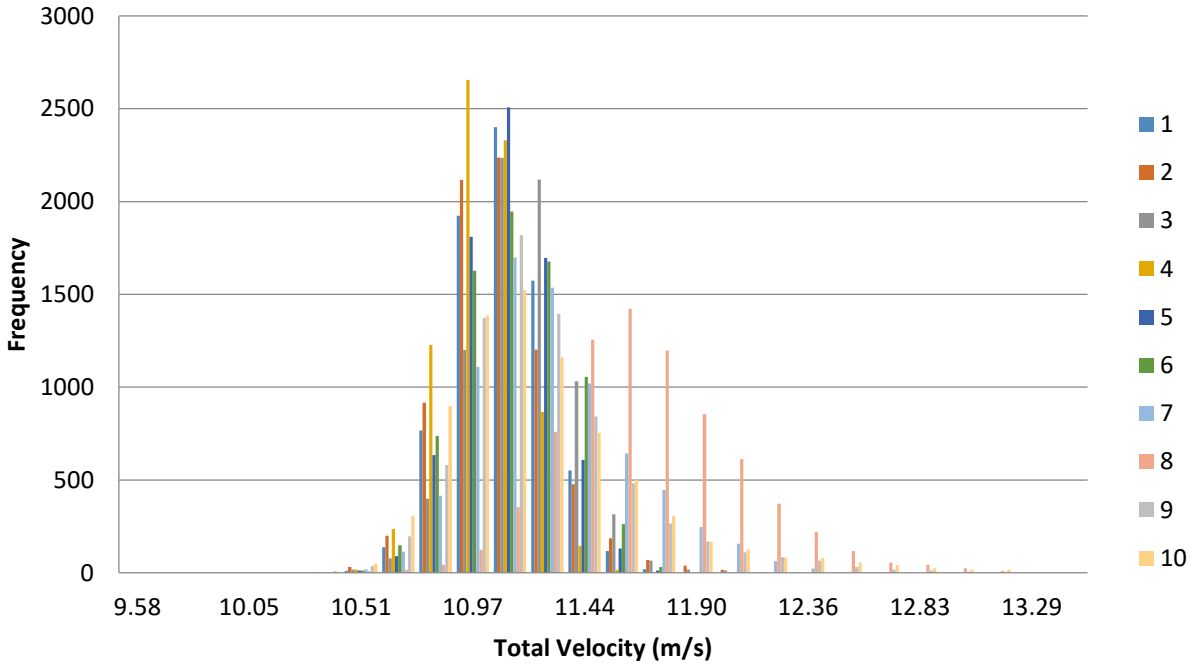
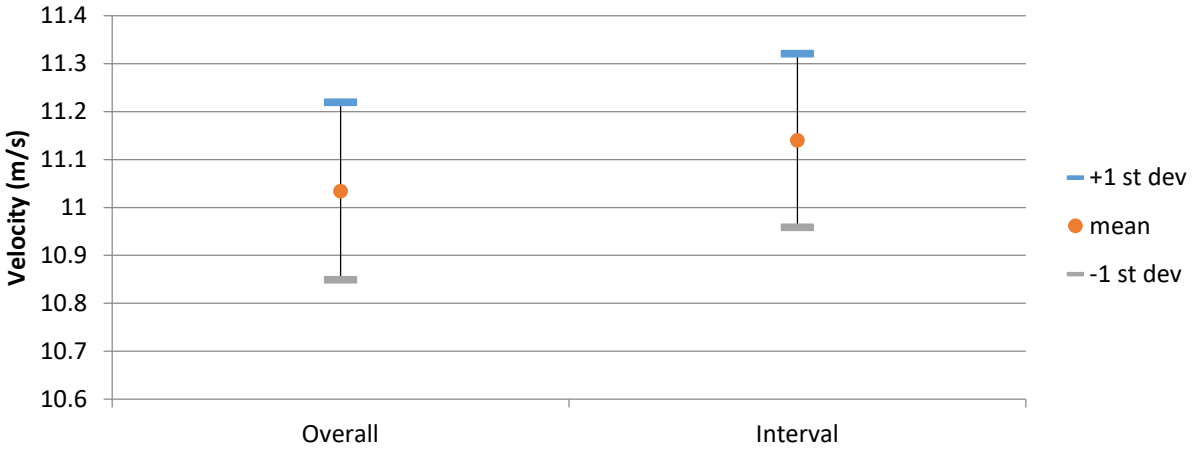
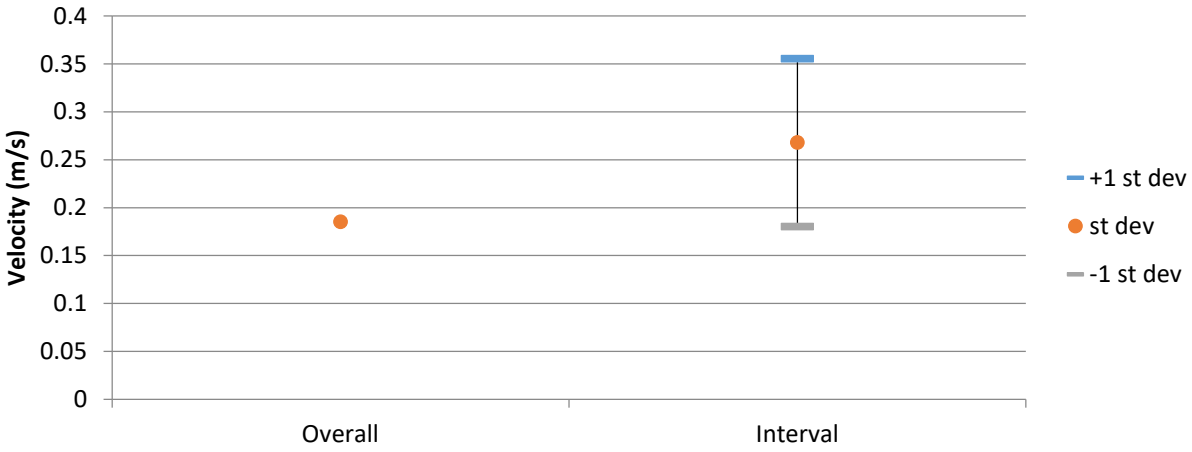


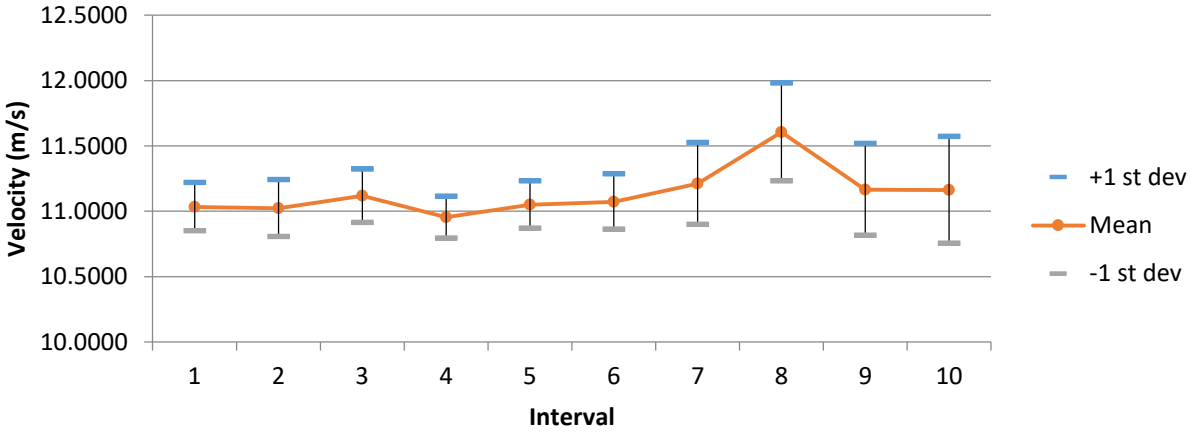
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 133
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: H3
First Sample Date: 14-Aug-13
First Sample Time: 09:35:49.781

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.6027	7.8115	9.9808	0.5673
u	9.0400	5.5100	7.4842	0.5573
v	8.9400	2.6500	5.8176	0.8215
w	-0.1420	-5.0900	-2.9437	0.6555

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	12.1567	8.4175	9.8785	0.4743	4.8010	21	0.17 %
2	12.4936	8.4773	9.9749	0.5049	5.0615	9	0.07 %
3	12.1024	8.4273	10.2070	0.5168	5.0634	51	0.41 %
4	12.6027	8.5631	10.1565	0.4617	4.5458	103	0.82 %
5	12.3035	8.5258	10.2240	0.4905	4.7974	17	0.14 %
6	12.1495	8.2632	10.1632	0.4899	4.8203	234	1.87 %
7	11.9147	8.6552	10.2845	0.4480	4.3557	80	0.64 %
8	11.4304	7.8685	9.8100	0.5621	5.7302	1222	9.78 %
9	11.1311	7.8984	9.5357	0.5310	5.5685	583	4.66 %
10	11.0231	7.8115	9.4740	0.4989	5.2662	746	5.97 %
		Average	9.9708	0.4978	5.0010		
		St dev	0.2757	0.0318	0.4086		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	7.8078	5.5008	-2.3560	0.3480	0.7857	0.5469	4.4573	10.0627	7.0045
2	7.8572	5.5100	-2.5267	0.3852	0.8151	0.6796	4.9022	10.3735	8.6488
3	7.7780	6.0246	-2.5422	0.4319	0.7853	0.6253	5.5532	10.0962	8.0396
4	7.7070	5.9566	-2.7591	0.3661	0.7793	0.3679	4.7507	10.1114	4.7742
5	7.8748	5.8744	-2.7011	0.3280	0.7975	0.4594	4.1656	10.1274	5.8337
6	7.4480	6.1253	-3.1078	0.4217	0.7047	0.4536	5.6625	9.4618	6.0899
7	7.6737	6.1423	-2.9346	0.3282	0.6939	0.3957	4.2764	9.0424	5.1564
8	6.9615	5.7732	-3.7030	0.3596	0.8657	0.4105	5.1654	12.4353	5.8965
9	6.8183	5.5549	-3.6046	0.2809	0.8255	0.3342	4.1198	12.1064	4.9009
10	6.7099	5.6890	-3.4210	0.2986	0.8155	0.4005	4.4504	12.1536	5.9685

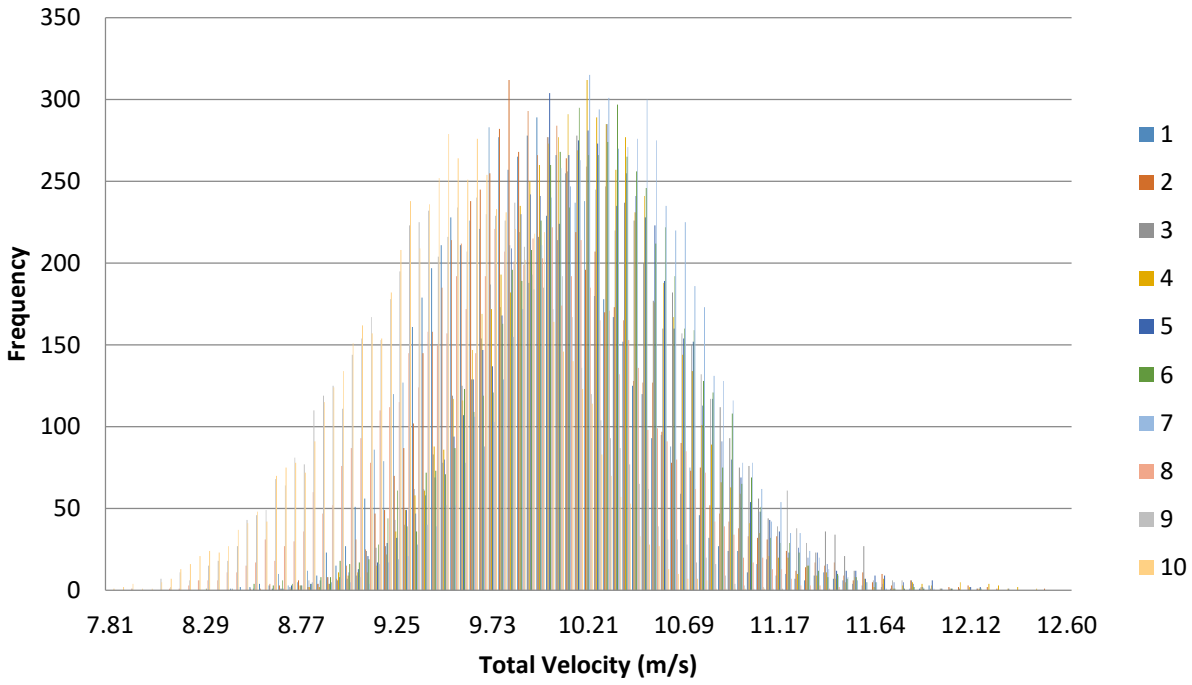


Figure 1. Velocity histogram for each interval (100 bins).

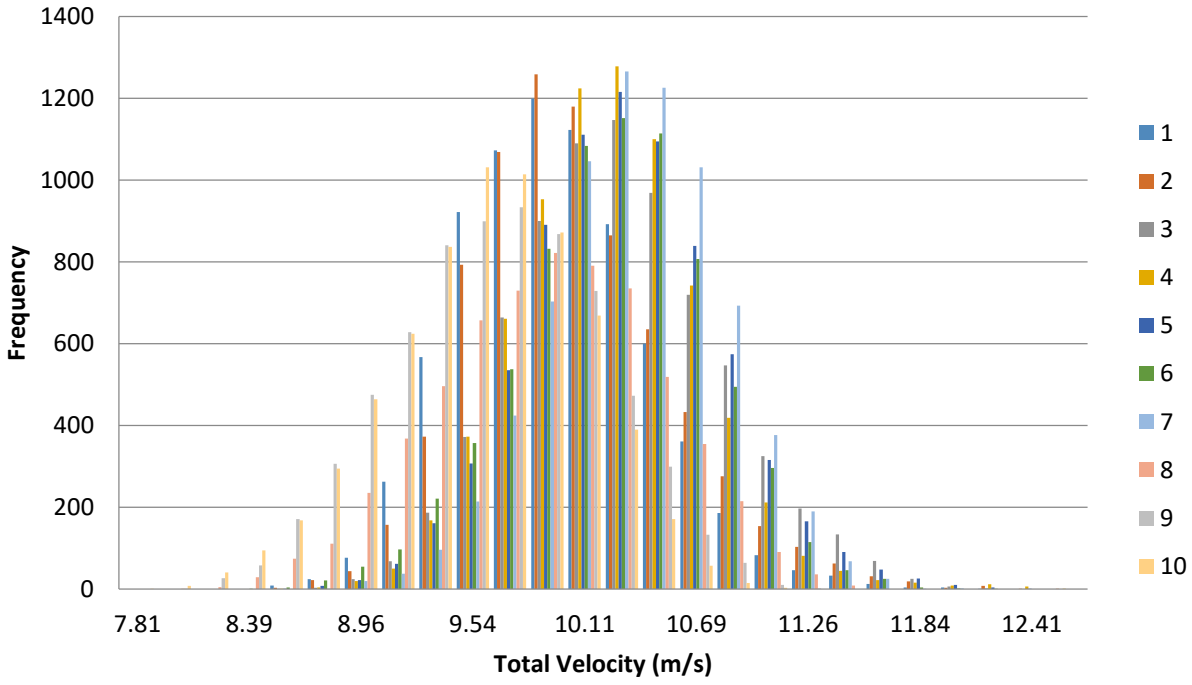
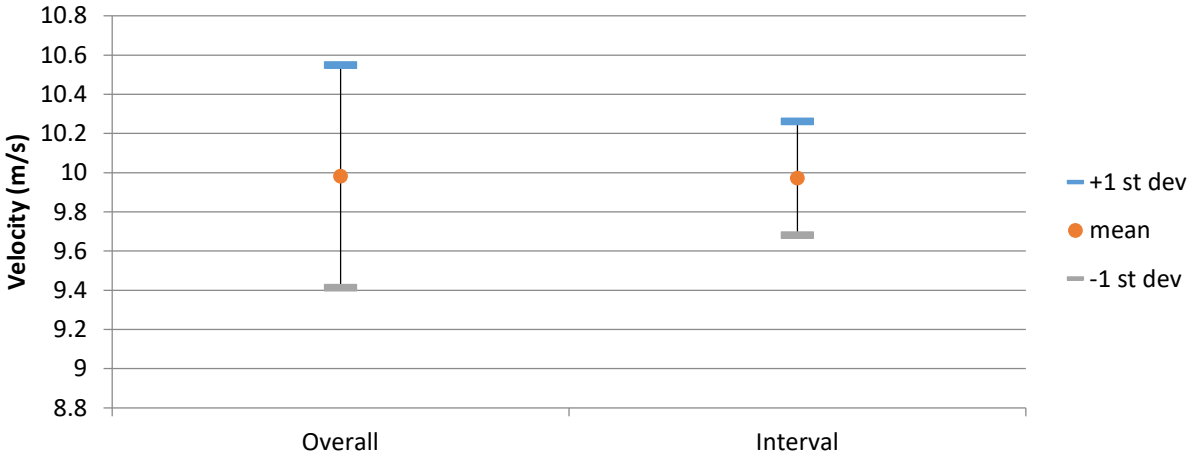
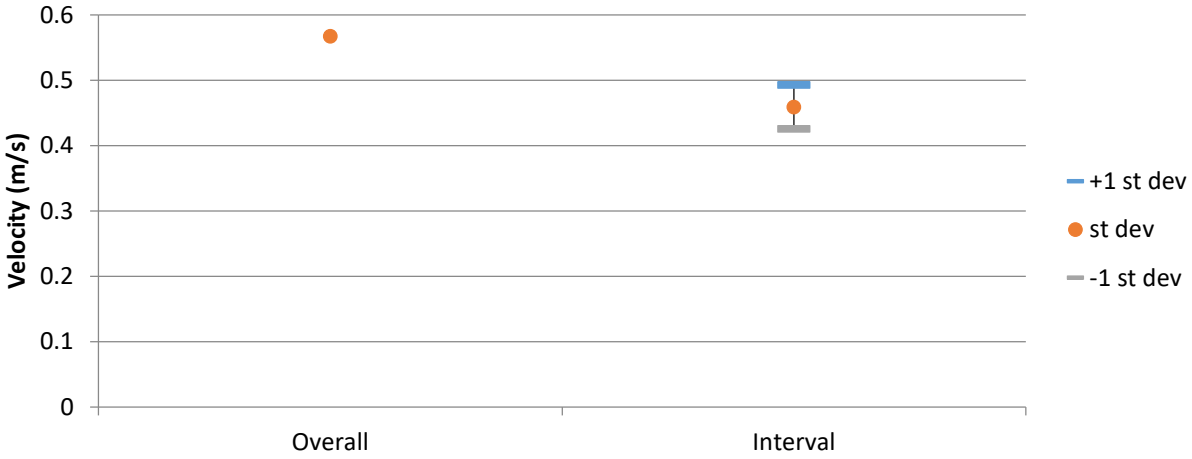


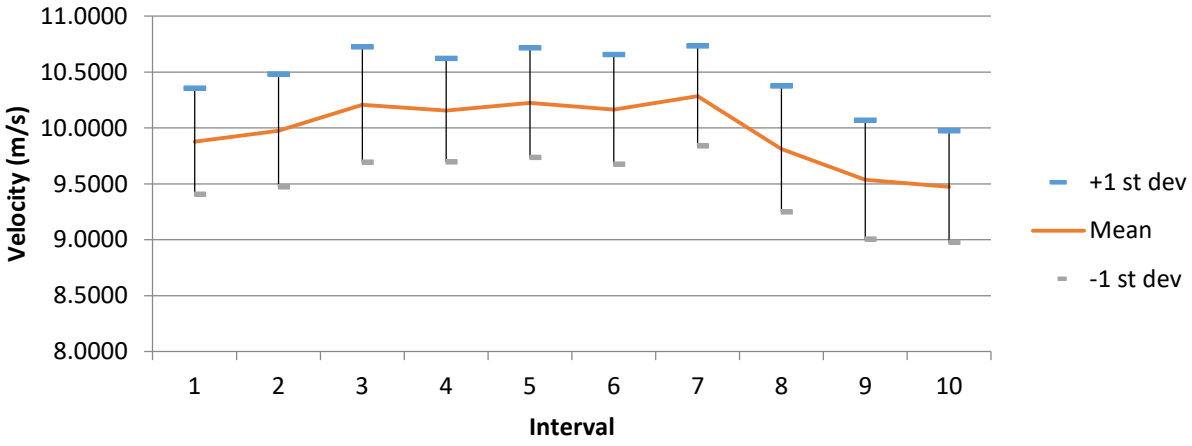
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 134
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: G3
First Sample Date: 14-Aug-13
First Sample Time: 09:38:23.375

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	13.0208	9.2017	10.4924	0.4994
u	10.6000	7.7300	9.0967	0.2523
v	8.9900	1.3400	4.3202	1.1224
w	-0.3180	-5.1200	-2.7045	0.5370

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	12.0295	9.4180	10.3729	0.2968	1.8977
2	11.0768	9.3884	10.1038	0.1917	4.2910
3	12.8616	9.4985	10.4076	0.4466	1.1922
4	10.6155	9.5675	10.0703	0.1201	1.4394
5	10.6461	9.4052	9.9762	0.1436	3.0059
6	11.7472	9.5512	10.4567	0.3143	3.2512
7	12.5327	9.8818	11.1032	0.3610	3.2995
8	12.7085	10.1146	11.1096	0.3666	2.2055
9	11.9586	10.1183	10.6305	0.2345	4.9911
10	13.0208	9.2017	10.6930	0.5337	2.8676
		Average	10.4924	0.3009	2.8441
		St Dev	0.3989	0.1322	1.1449

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.0296	4.0031	-3.0279	0.2659	0.8741	0.3525	2.9451	9.6809	3.9037
2	9.2011	2.9657	-2.8394	0.3225	0.5551	0.4386	3.5051	6.0333	4.7666
3	9.0817	4.2161	-2.6348	0.2409	0.9412	0.6159	2.6526	10.3640	6.7819
4	9.1438	3.3189	-2.5132	0.1762	0.5564	0.3816	1.9267	6.0848	4.1734
5	9.1505	3.4344	-1.9242	0.1991	0.3826	0.3592	2.1761	4.1812	3.9253
6	9.0841	4.4669	-2.5296	0.1414	0.6263	0.3943	1.5570	6.8943	4.3410
7	9.0880	5.6624	-2.8717	0.2091	0.6067	0.3151	2.3003	6.6763	3.4673
8	9.1521	5.6613	-2.6766	0.1918	0.6692	0.3145	2.0960	7.3119	3.4367
9	9.2079	4.5651	-2.6645	0.1176	0.5090	0.2564	1.2771	5.5274	2.7849
10	8.8284	4.9076	-3.3623	0.3326	0.9781	0.4771	3.7671	11.0795	5.4045

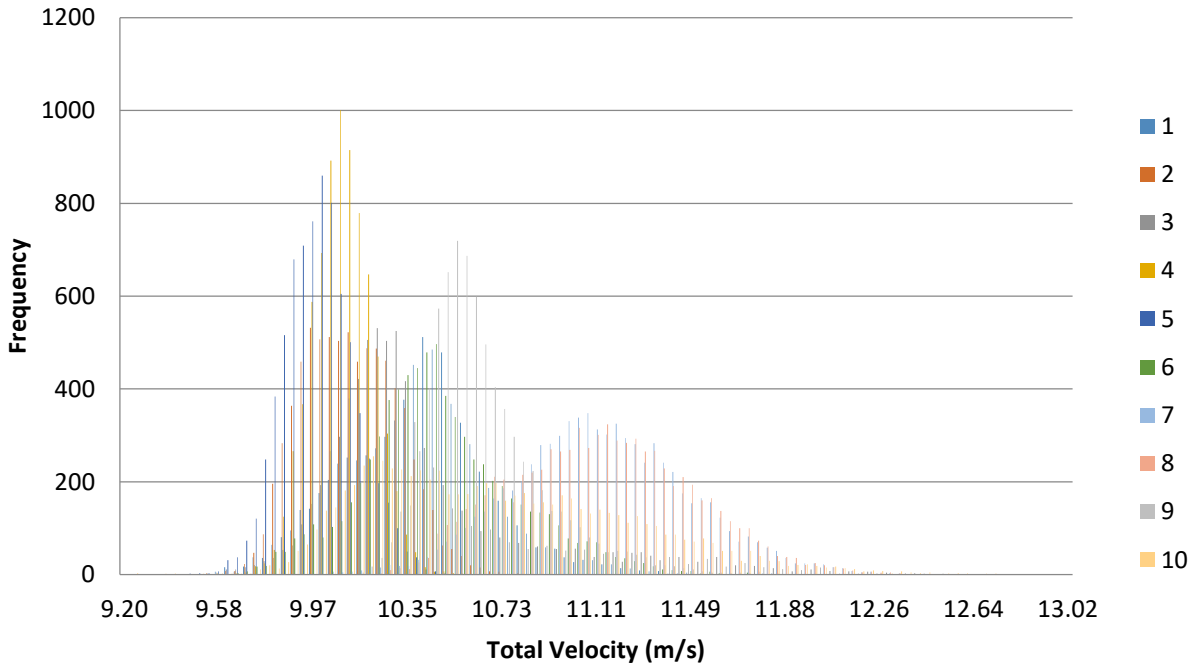


Figure 1. Velocity histogram for each interval (100 bins).

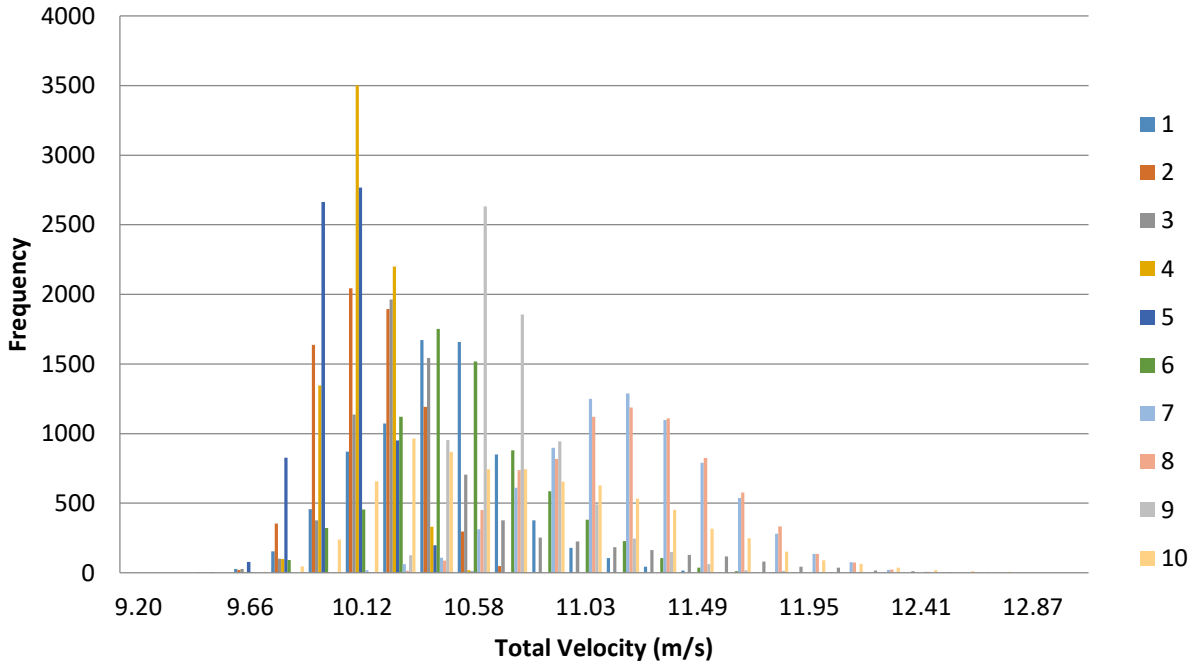
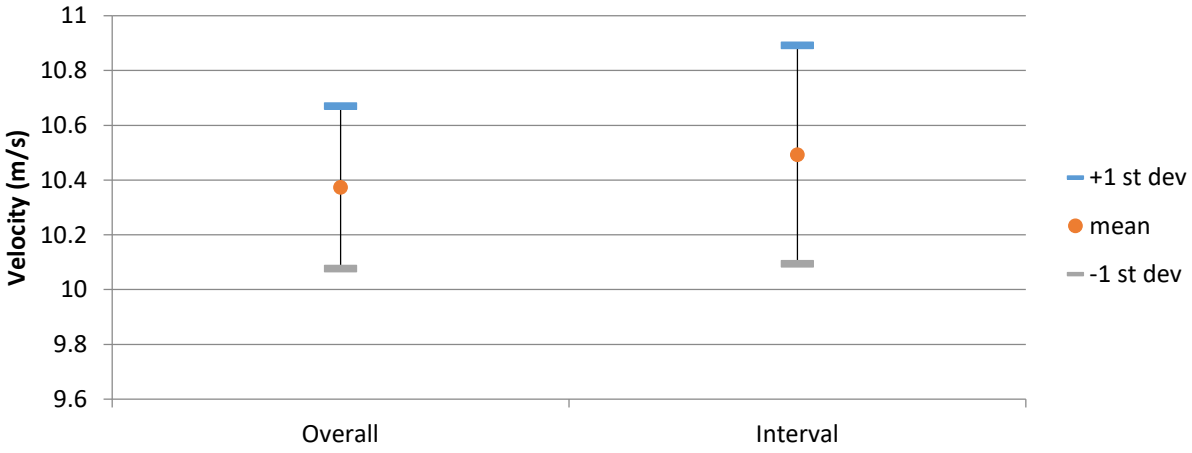
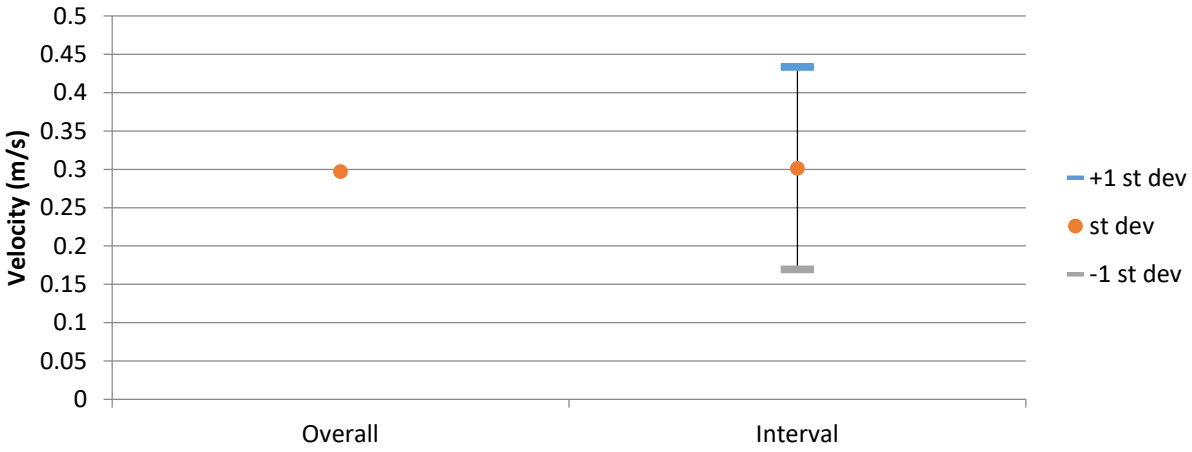


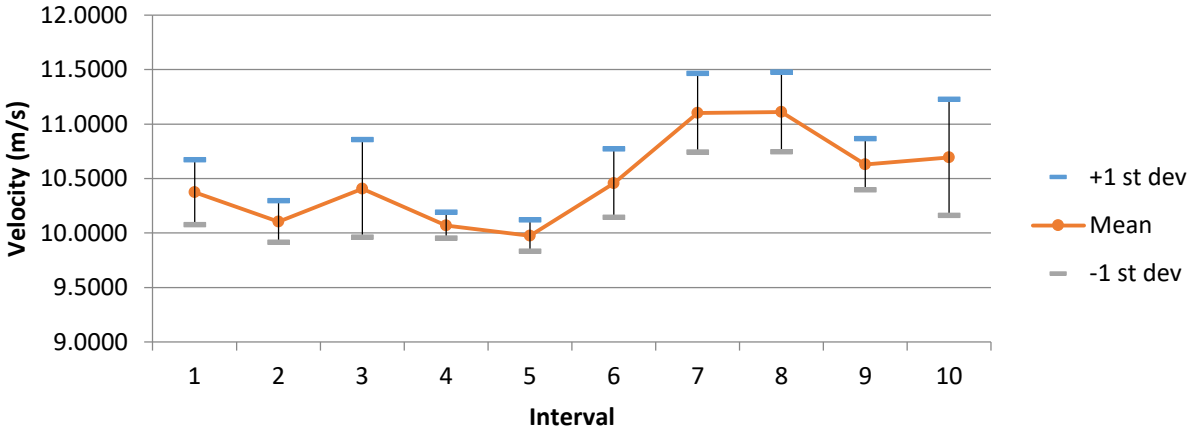
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 135
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: G4
First Sample Date: 14-Aug-13
First Sample Time: 09:39:57.375

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.9140	8.5304	9.7843	0.4226
u	10.2000	7.7000	8.9763	0.3229
v	8.5900	1.3900	3.5963	0.8343
w	0.3670	-3.7800	-1.1170	0.5959

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	12.9140	9.6385	10.3691	0.3379	2.4661
2	12.6553	9.6535	10.2474	0.2527	1.6529
3	11.4274	9.6257	10.0506	0.1661	2.3941
4	11.4465	9.1037	9.8715	0.2363	3.0666
5	11.3887	8.8572	9.8753	0.3028	2.5563
6	10.3766	8.7841	9.5762	0.2448	2.5813
7	10.2561	8.5304	9.3701	0.2419	2.2428
8	10.2331	8.8382	9.3638	0.2100	2.0583
9	10.3426	8.7726	9.3905	0.1933	2.0434
10	10.6593	9.2102	9.7283	0.1988	2.4373
		Average	9.7843	0.2385	2.3499
		St Dev	0.3641	0.0516	0.3618

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.0993	4.5989	-1.7551	0.1878	0.6315	0.4119	2.0634	6.9401	4.5264
2	9.0358	4.3896	-1.9247	0.1656	0.5863	0.2897	1.8329	6.4889	3.2061
3	9.0033	4.2055	-1.4060	0.2021	0.4619	0.2558	2.2445	5.1304	2.8414
4	9.1331	3.4628	-1.2512	0.3133	0.4819	0.4490	3.4305	5.2761	4.9158
5	9.0738	3.6384	-1.0283	0.2859	0.5952	0.7398	3.1507	6.5592	8.1534
6	9.1863	2.5748	-0.6336	0.3316	0.3715	0.3110	3.6102	4.0437	3.3853
7	8.9962	2.5287	-0.4132	0.3362	0.4042	0.2900	3.7367	4.4935	3.2240
8	8.7846	3.1135	-0.8013	0.3266	0.3137	0.1131	3.7176	3.5714	1.2870
9	8.6839	3.4541	-0.7388	0.3272	0.4350	0.1883	3.7673	5.0090	2.1686
10	8.7669	3.9963	-1.2177	0.2421	0.4549	0.3208	2.7610	5.1886	3.6590

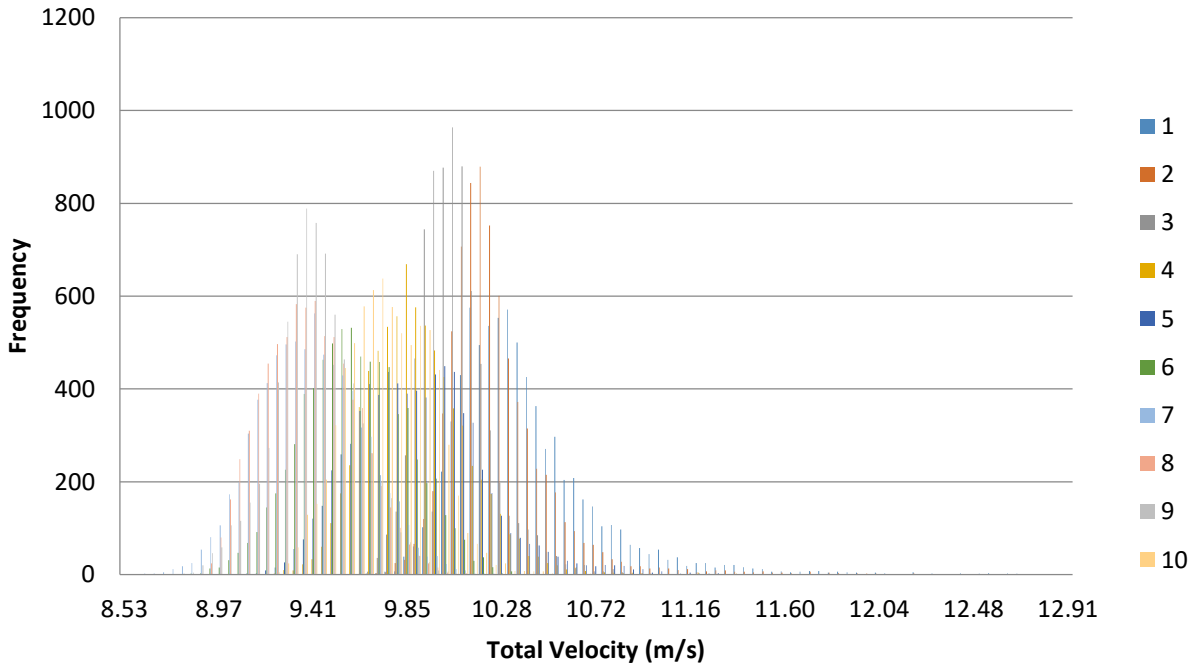


Figure 1. Velocity histogram for each interval (100 bins).

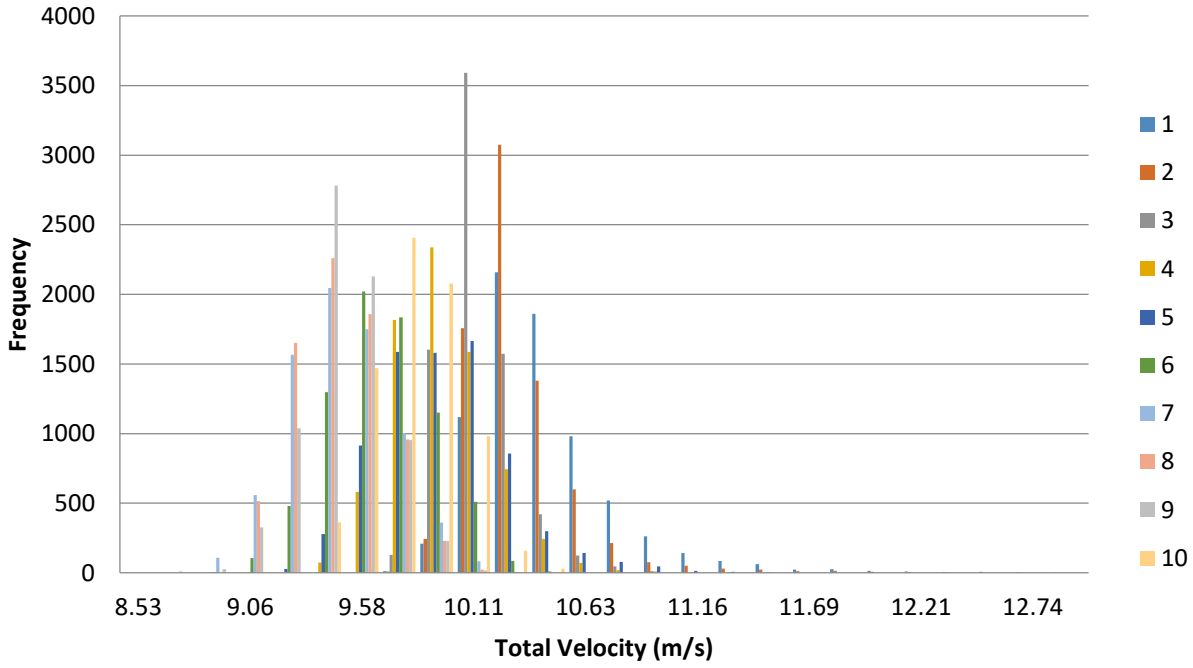
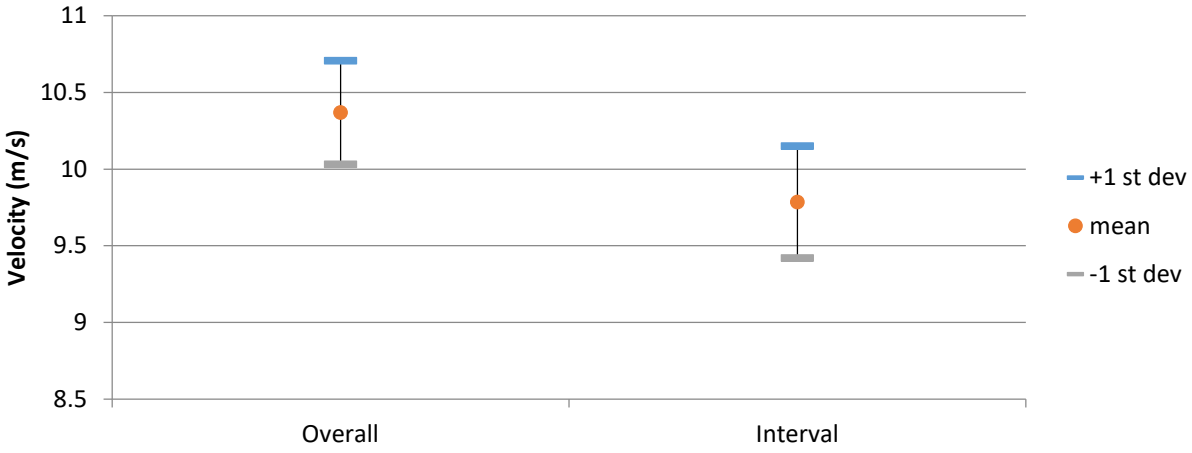
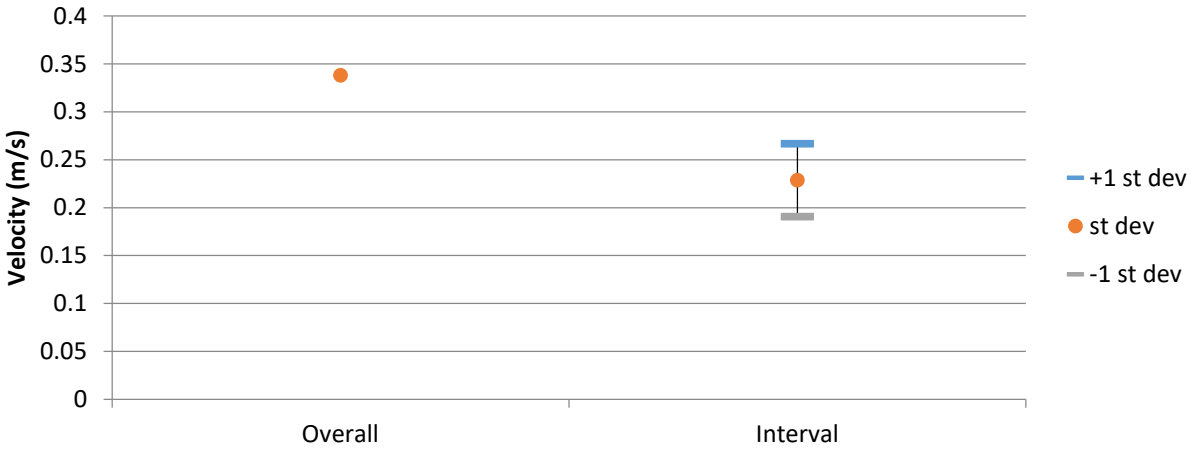


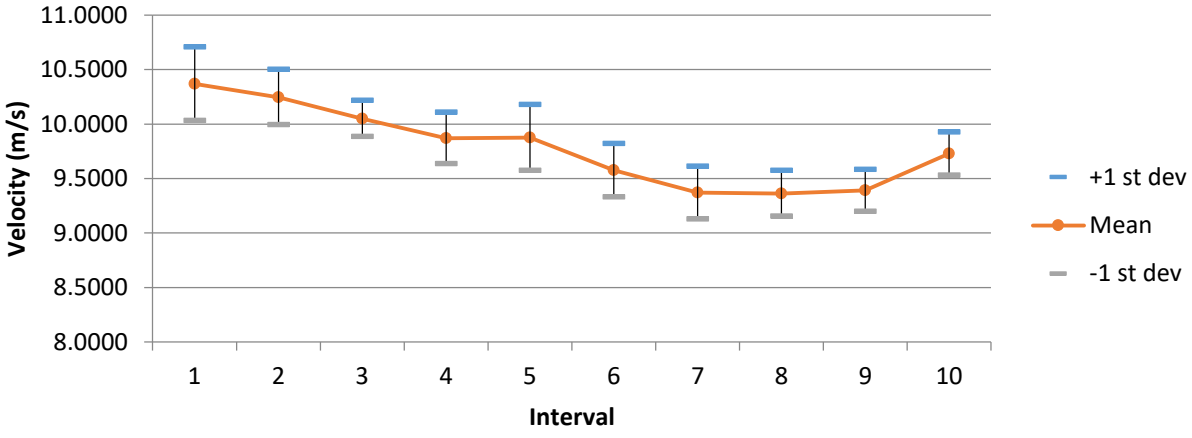
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 136
Blockage Condition: Existing Buildings
Blower Frequency: 50 Hz
Inlet Probe Location: G5
First Sample Date: 14-Aug-13
First Sample Time: 09:41:30.328

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.4044	8.5606	9.4302	0.1941
u	9.7200	7.8000	8.7805	0.2397
v	5.1000	1.7000	3.2651	0.4427
w	0.0493	-2.1300	-0.9240	0.3188

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	10.0840	9.1092	9.5093	0.1274	1.5734
2	9.9707	8.9418	9.3931	0.1478	1.4306
3	9.9617	9.0235	9.4777	0.1356	1.4457
4	10.1512	9.2513	9.6380	0.1393	1.9936
5	10.4044	8.9199	9.5869	0.1911	1.6474
6	10.0009	8.8510	9.4034	0.1549	1.8377
7	9.8798	8.5606	9.2921	0.1708	1.6926
8	9.8277	8.7107	9.2382	0.1564	1.5501
9	9.9612	8.9634	9.3636	0.1451	1.7203
10	10.0230	8.8764	9.3999	0.1617	1.6226
		Average	9.4302	0.1530	1.6514
		St Dev	0.1246	0.0185	0.1632

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.7667	3.5692	-0.8257	0.2178	0.2819	0.1993	2.4843	3.2156	2.2739
2	8.7468	3.3254	-0.7494	0.2350	0.2351	0.1263	2.6866	2.6877	1.4439
3	8.7317	3.5638	-0.8426	0.2122	0.2681	0.2753	2.4301	3.0705	3.1525
4	8.8167	3.6652	-1.2534	0.1794	0.3184	0.1951	2.0343	3.6108	2.2127
5	8.9477	3.1135	-1.3617	0.2085	0.4954	0.2185	2.3301	5.5367	2.4422
6	8.9381	2.6597	-1.1453	0.2284	0.3073	0.1656	2.5549	3.4385	1.8524
7	8.7552	2.9198	-0.9501	0.2406	0.3259	0.3560	2.7486	3.7227	4.0661
8	8.6999	3.0031	-0.7059	0.2328	0.2721	0.1862	2.6754	3.1272	2.1402
9	8.7153	3.3156	-0.7780	0.2335	0.2541	0.1536	2.6795	2.9158	1.7625
10	8.6868	3.5160	-0.6278	0.2341	0.2809	0.1840	2.6955	3.2341	2.1177

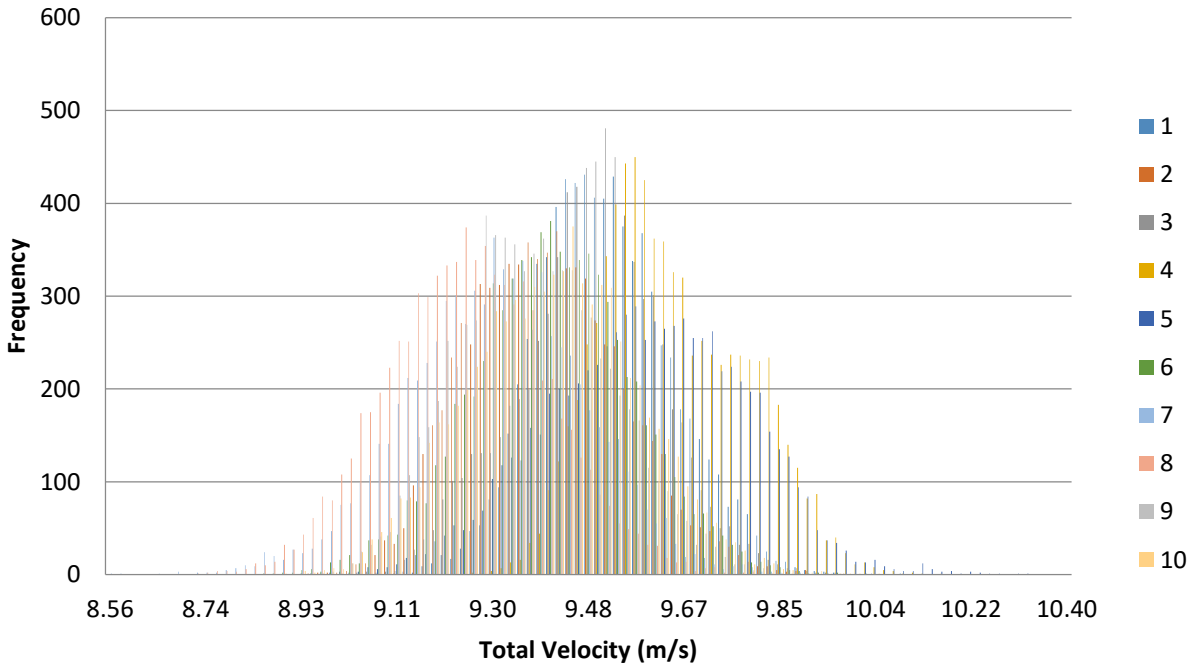


Figure 1. Velocity histogram for each interval (100 bins).

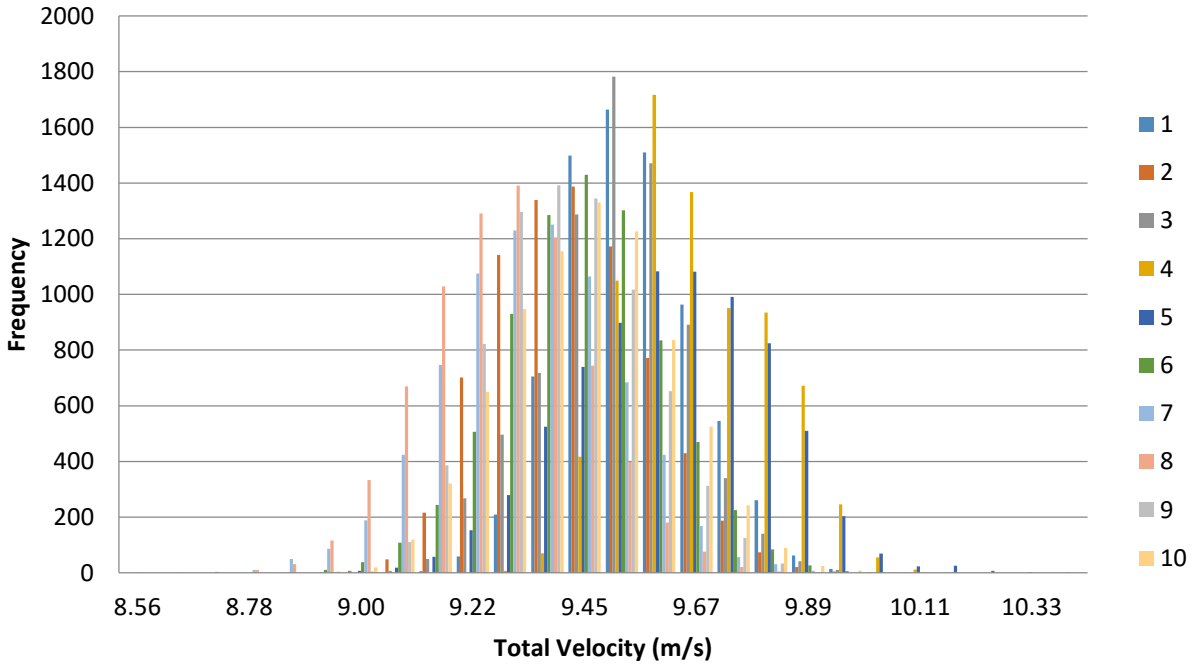
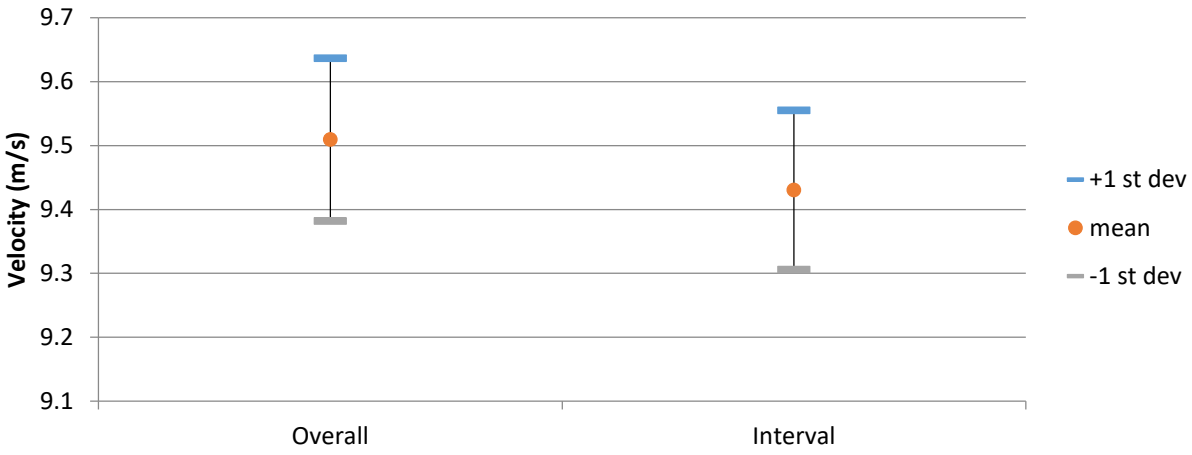
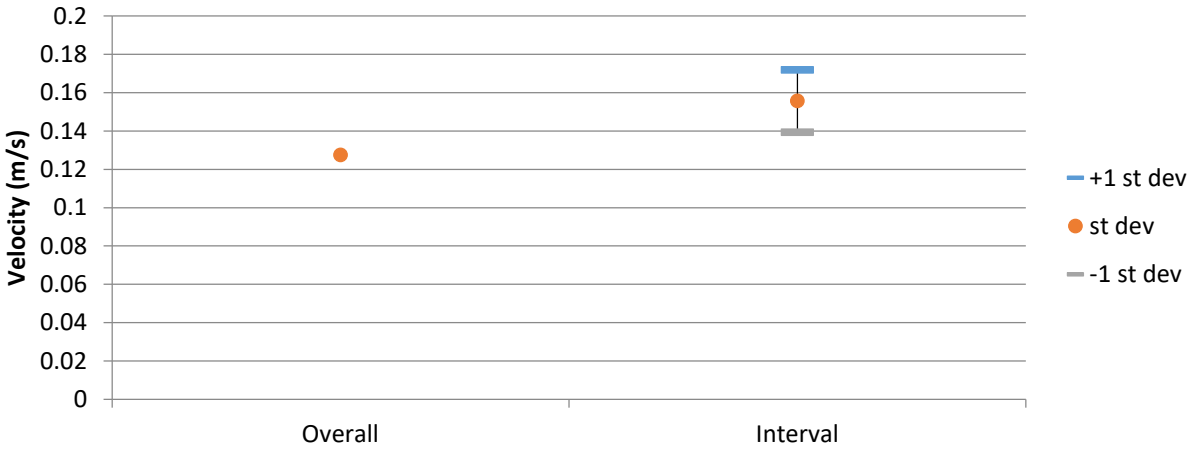


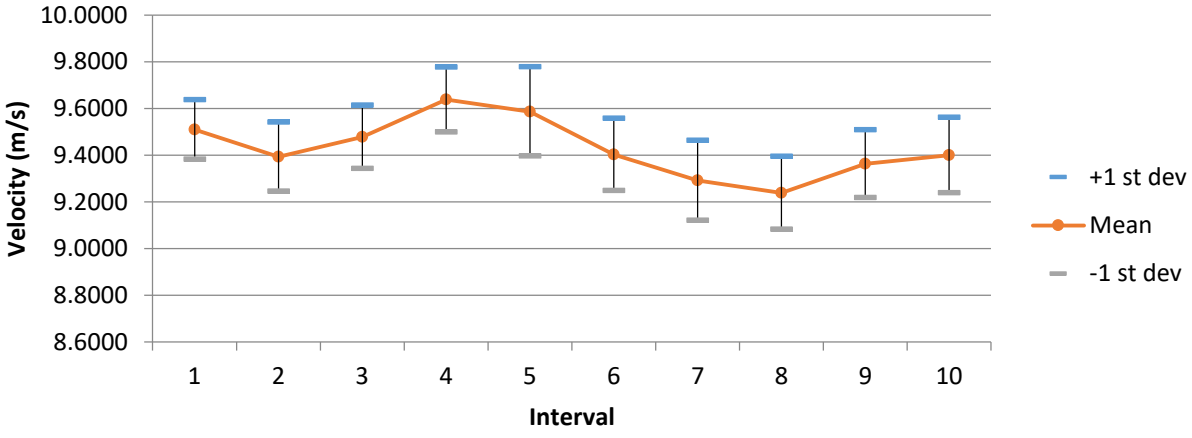
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 137
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: G2
First Sample Date: 14-Aug-13
First Sample Time: 09:43:26.453

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	13.3959	9.8216	10.8367	0.4455
u	10.7000	7.8400	9.2768	0.3079
v	8.8900	1.0300	3.8995	0.9730
w	-1.9100	-6.0700	-3.8854	0.4788

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	12.2464	9.8398	10.6496	0.3358	2.5016
2	11.5788	10.0024	10.6169	0.2656	1.2150
3	11.2895	10.0373	10.4637	0.1271	1.8252
4	11.3707	10.0176	10.5454	0.1925	1.7331
5	11.5233	10.1826	10.6451	0.1845	2.1627
6	11.8245	10.2386	10.7122	0.2317	2.0027
7	12.0594	10.2998	10.7659	0.2156	4.0545
8	13.2657	9.8216	11.2197	0.4549	3.4885
9	13.1082	10.2661	11.3608	0.3963	3.5220
10	13.3959	10.0309	11.3877	0.4011	2.5884
		Average	10.8367	0.2805	2.5094
		St Dev	0.3479	0.1099	0.8661

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.4915	3.2156	-3.4668	0.4471	0.8054	0.4816	4.7102	8.4859	5.0739
2	9.4827	3.3086	-3.3933	0.3489	0.4706	0.2512	3.6792	4.9630	2.6494
3	9.1277	3.1885	-3.9718	0.2225	0.3796	0.2333	2.4375	4.1591	2.5561
4	9.2421	3.1286	-3.9460	0.3265	0.4633	0.3811	3.5329	5.0132	4.1232
5	9.3793	3.5180	-3.5688	0.2616	0.4001	0.1982	2.7889	4.2659	2.1132
6	9.3415	3.8110	-3.5613	0.2633	0.4556	0.2398	2.8188	4.8770	2.5675
7	9.2574	3.8768	-3.8598	0.1498	0.5219	0.1732	1.6178	5.6376	1.8709
8	9.1288	4.7337	-4.3883	0.2524	0.9335	0.3903	2.7651	10.2262	4.2751
9	9.1577	5.0205	-4.4187	0.1648	0.7197	0.2962	1.7991	7.8586	3.2348
10	9.1593	5.1940	-4.2794	0.2061	0.7145	0.3224	2.2498	7.8012	3.5201

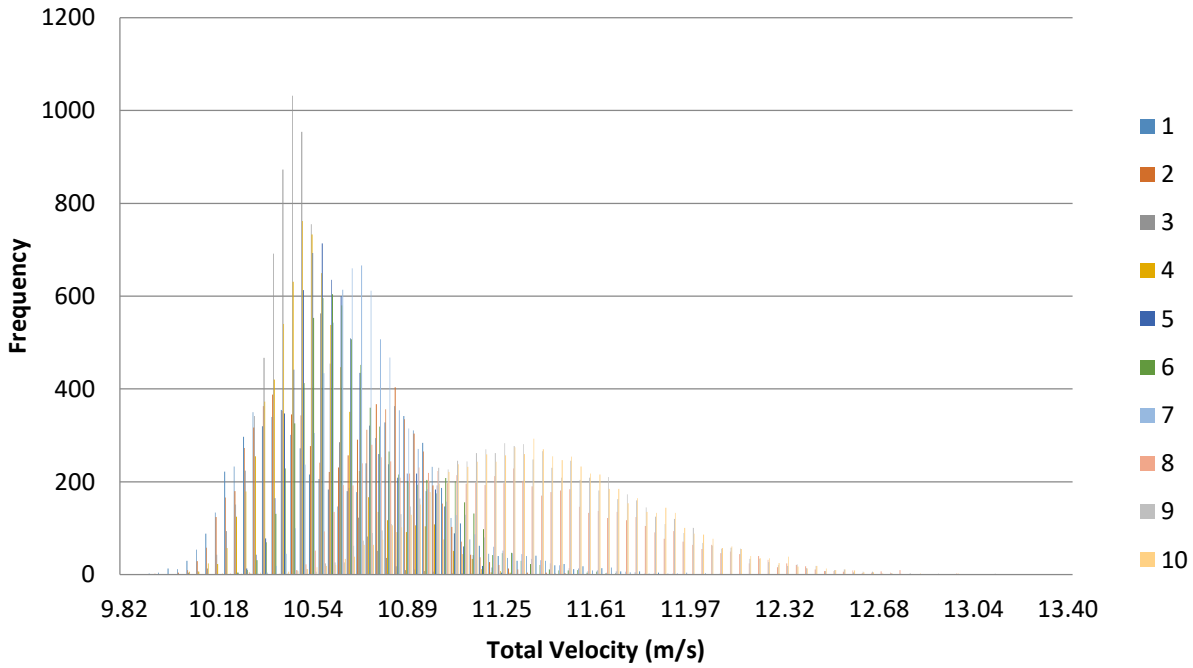


Figure 1. Velocity histogram for each interval (100 bins).

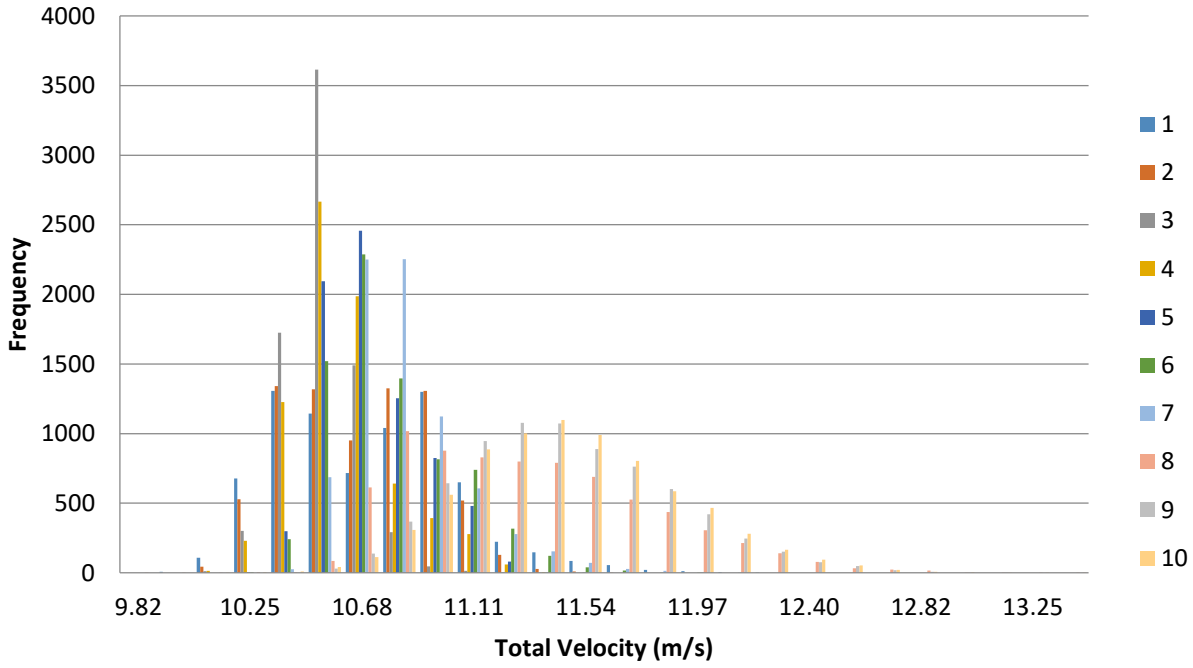
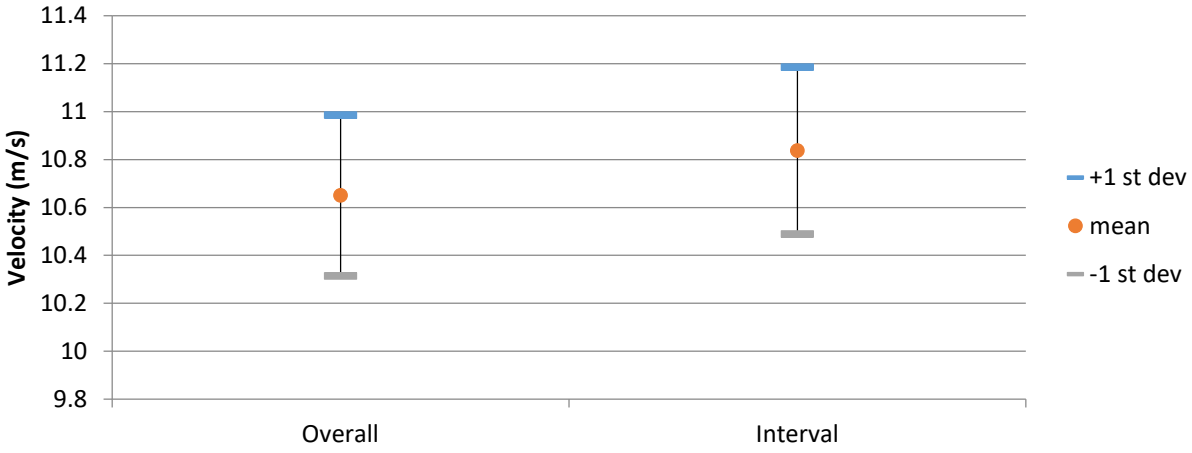
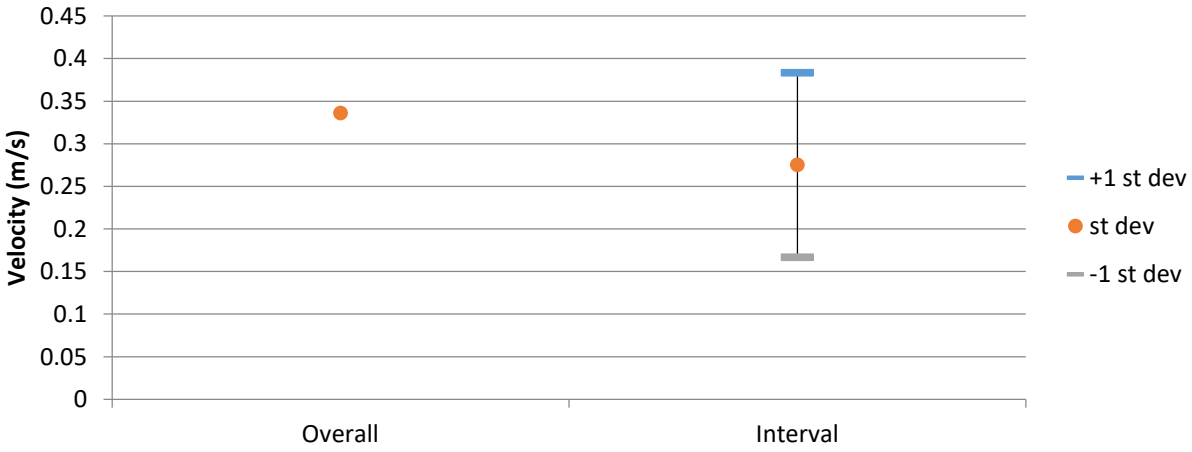


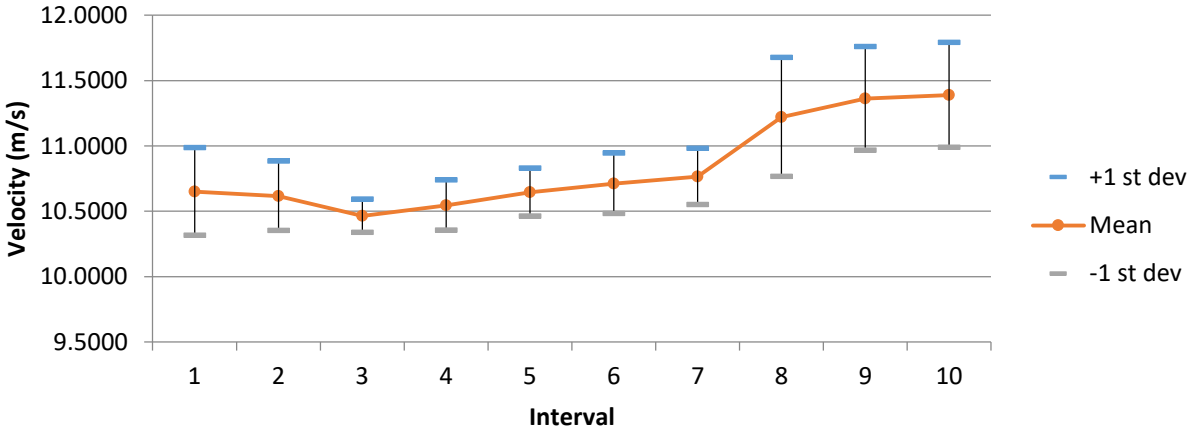
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 138
Blockage Condition: Existing Buildings .
Blower Frequency: 50 Hz
Inlet Probe Location: F3
First Sample Date: 14-Aug-13
First Sample Time: 09:45:59.328

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.7633	10.1003	11.0355	0.1954
u	11.1000	8.8900	10.2908	0.2456
v	4.9100	-0.5060	2.4862	0.5336
w	-1.5100	-5.4000	-3.0347	0.4296

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.6010	10.4068	11.0461	0.1504	1.4022
2	11.5221	10.4575	11.0294	0.1547	1.7193
3	11.4445	10.2064	10.8540	0.1866	1.8419
4	11.7633	10.1003	10.9546	0.2018	1.4109
5	11.7116	10.3856	11.0488	0.1559	1.3012
6	11.6753	10.5004	11.0633	0.1440	1.6758
7	11.5758	10.3330	11.0439	0.1851	1.9268
8	11.6237	10.3862	11.0910	0.2137	1.7633
9	11.7584	10.3412	11.0933	0.1956	1.8042
10	11.6645	10.3555	11.1305	0.2008	1.6207
		Average	11.0355	0.1789	1.6466
		St Dev	0.0789	0.0253	0.1991

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.3584	2.4209	-2.9206	0.1976	0.4174	0.3704	1.9074	4.0293	3.5758
2	10.3186	2.3728	-3.0573	0.2064	0.3139	0.2824	2.0002	3.0424	2.7366
3	10.1567	1.9598	-3.2600	0.2472	0.3011	0.2556	2.4336	2.9642	2.5163
4	10.2230	2.1760	-3.1796	0.3051	0.5402	0.5526	2.9842	5.2842	5.4052
5	10.3926	2.3428	-2.8456	0.1667	0.5906	0.3644	1.6038	5.6834	3.5060
6	10.3564	2.7867	-2.6623	0.1626	0.3352	0.4108	1.5700	3.2371	3.9671
7	10.3606	2.3261	-2.9667	0.2102	0.4581	0.4384	2.0289	4.4220	4.2318
8	10.2150	2.8350	-3.1995	0.2920	0.4576	0.3765	2.8584	4.4796	3.6860
9	10.2186	2.9513	-3.0895	0.2552	0.4318	0.4168	2.4977	4.2255	4.0791
10	10.3079	2.6905	-3.1654	0.2446	0.4678	0.3708	2.3726	4.5379	3.5974

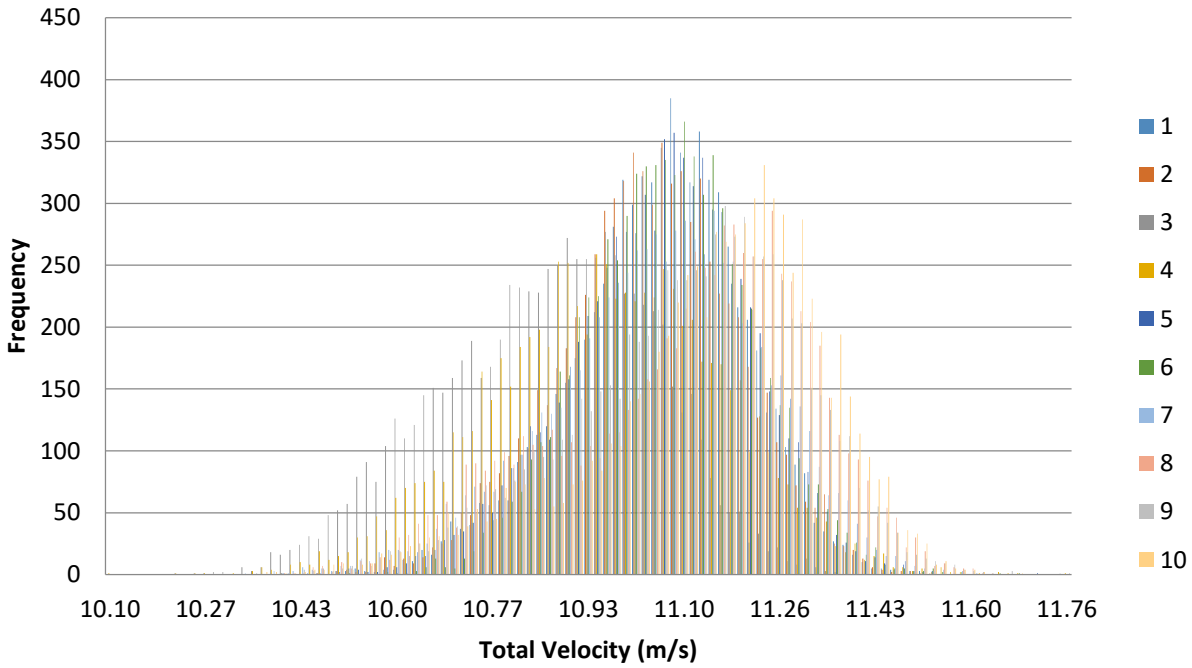


Figure 1. Velocity histogram for each interval (100 bins).

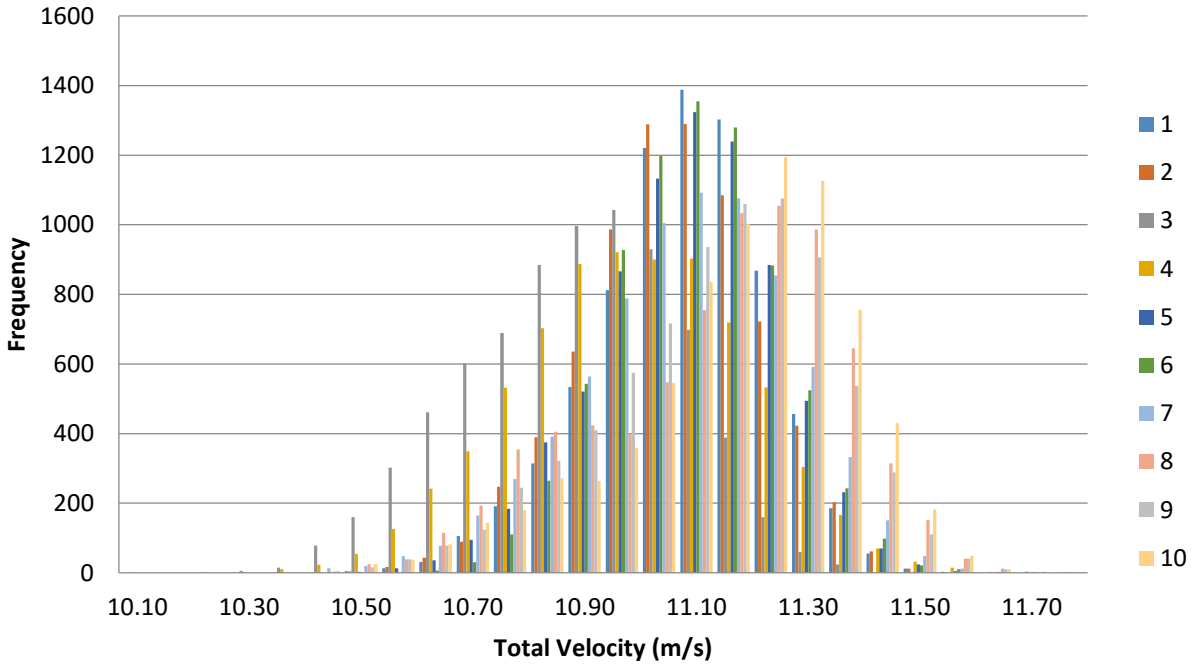
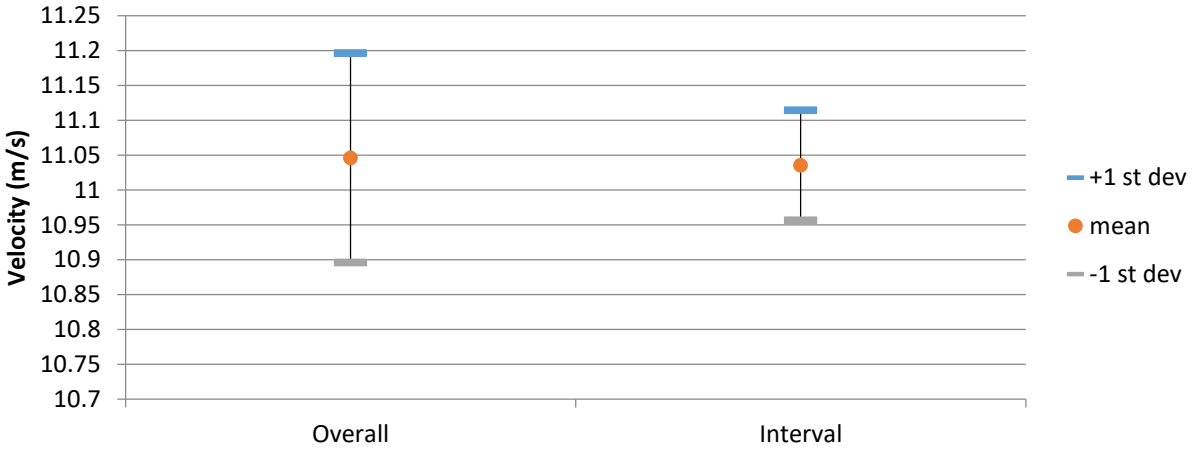
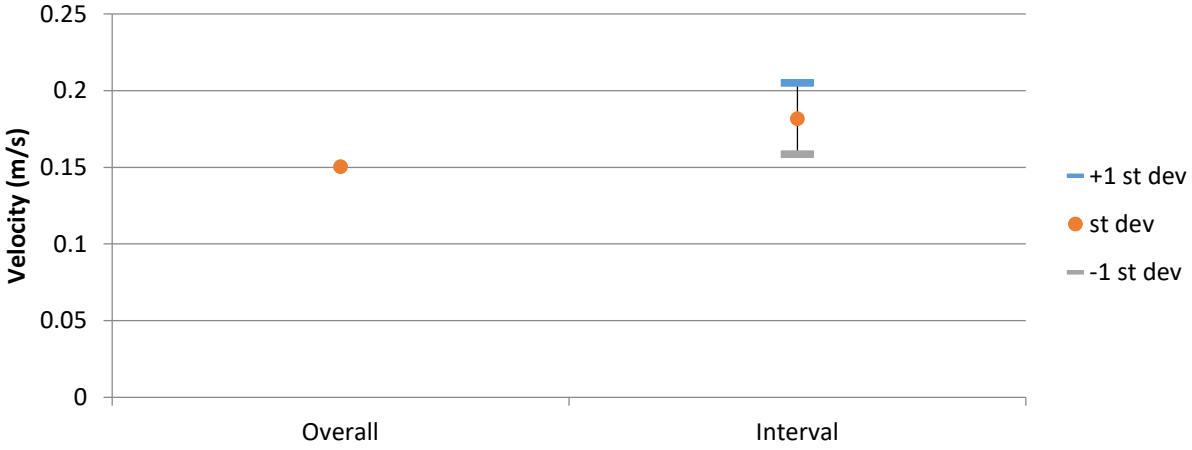


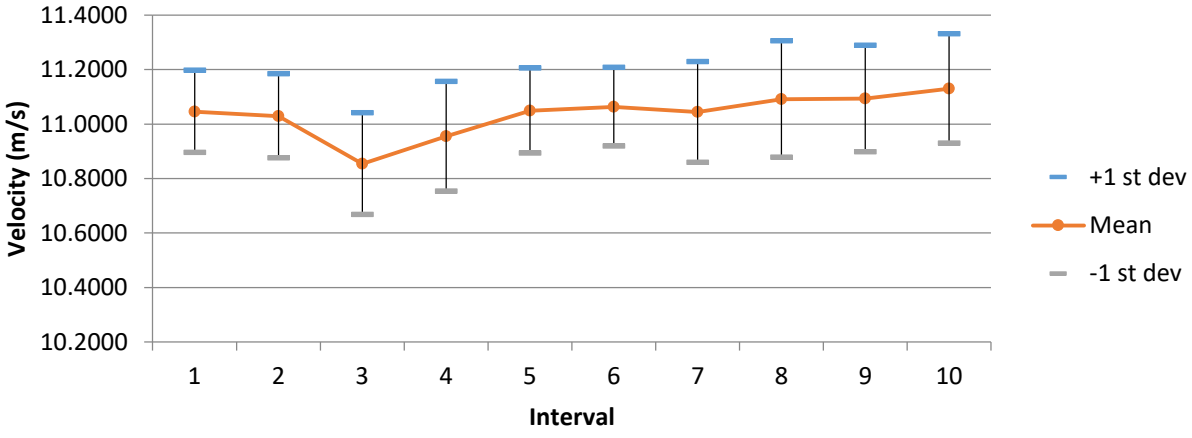
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 139
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 14-Aug-13
First Sample Time: 09:49:15.140

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.9962	10.0462	11.0919	0.2069
u	11.5000	8.6800	10.6227	0.2815
v	2.5600	-2.4900	0.3190	0.6984
w	-0.8230	-6.1200	-3.0091	0.7116

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.6735	10.4070	11.0427	0.1799	1.7455
2	11.8401	10.4312	11.0709	0.1932	1.7741
3	11.7709	10.3303	11.0208	0.1955	1.9941
4	11.8036	10.0462	10.9336	0.2180	1.4604
5	11.5832	10.3920	11.0278	0.1610	1.7008
6	11.8543	10.5343	11.2017	0.1905	1.4791
7	11.8180	10.5633	11.1907	0.1655	1.5157
8	11.9962	10.5957	11.2050	0.1698	1.6590
9	11.7990	10.5174	11.1825	0.1855	1.7509
10	11.7595	10.3763	11.0431	0.1934	1.6702
		Average	11.0919	0.1853	1.6750
		St Dev	0.0956	0.0169	0.1527

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.5156	0.0048	-3.2276	0.2217	0.7694	0.5805	2.1080	7.3167	5.5206
2	10.7272	0.0874	-2.5547	0.1778	0.8356	0.5138	1.6573	7.7899	4.7898
3	10.7192	-0.4394	-2.3666	0.1722	0.5533	0.6823	1.6065	5.1615	6.3656
4	10.3239	0.1124	-3.3192	0.4927	0.5900	1.1784	4.7726	5.7148	11.4145
5	10.7149	0.3089	-2.5025	0.1681	0.5102	0.4288	1.5690	4.7620	4.0018
6	10.6497	1.1424	-3.2164	0.2255	0.4376	0.4536	2.1178	4.1093	4.2592
7	10.6668	0.5199	-3.3077	0.2097	0.3428	0.3262	1.9657	3.2135	3.0584
8	10.7332	0.7654	-3.0547	0.2020	0.4688	0.4504	1.8816	4.3674	4.1965
9	10.6778	0.2290	-3.2224	0.2060	0.5193	0.5652	1.9291	4.8635	5.2932
10	10.4991	0.4598	-3.3195	0.2655	0.3992	0.5432	2.5292	3.8024	5.1737

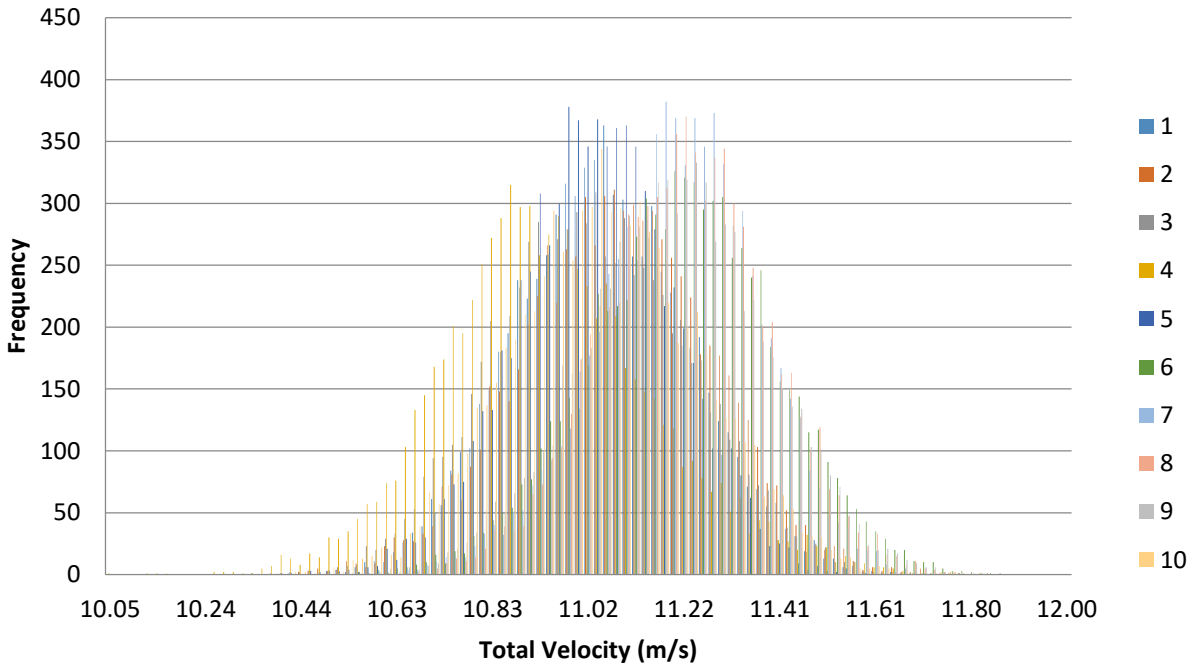


Figure 1. Velocity histogram for each interval (100 bins).

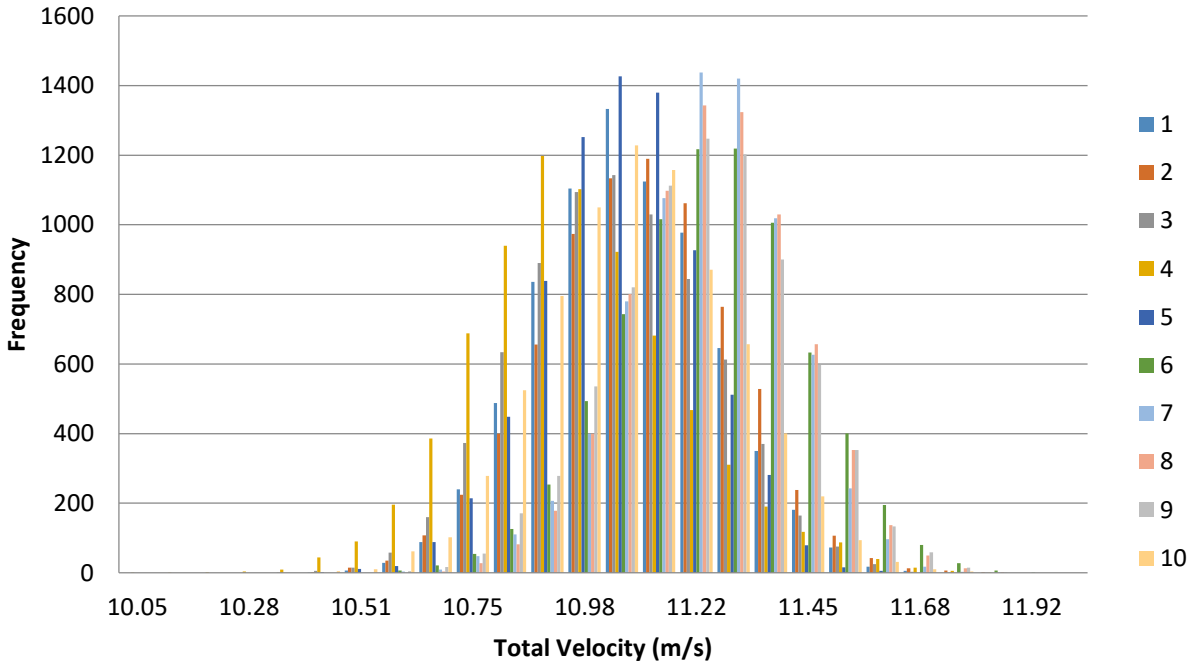
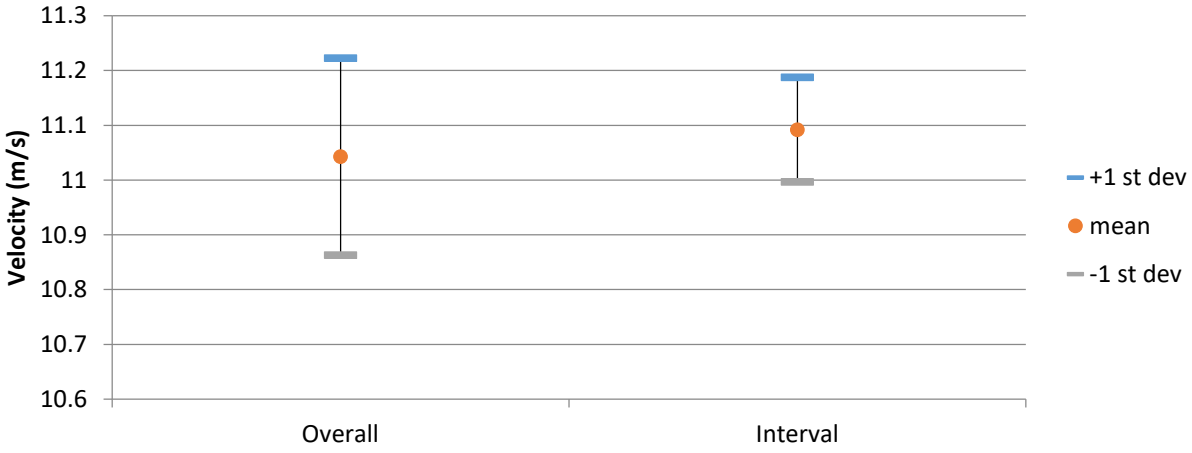
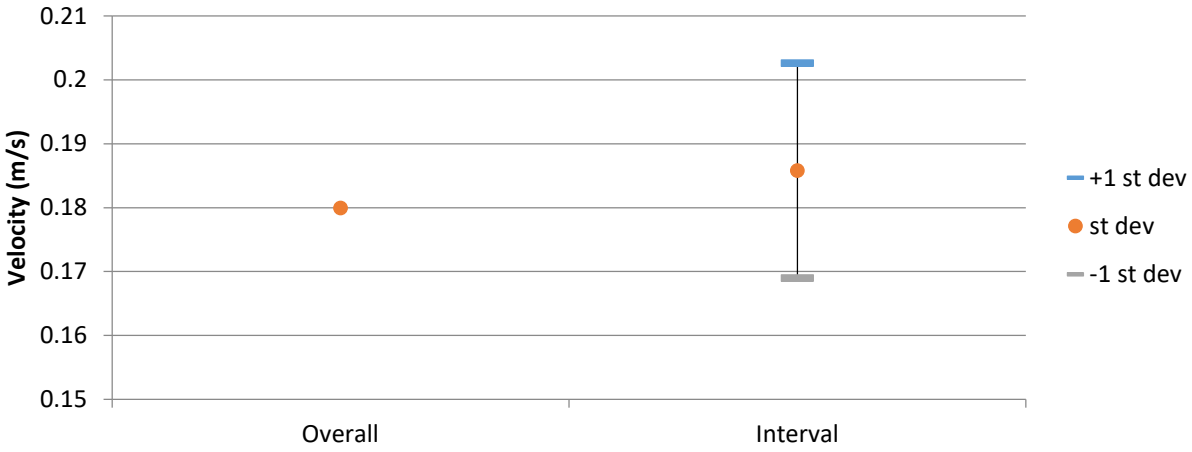


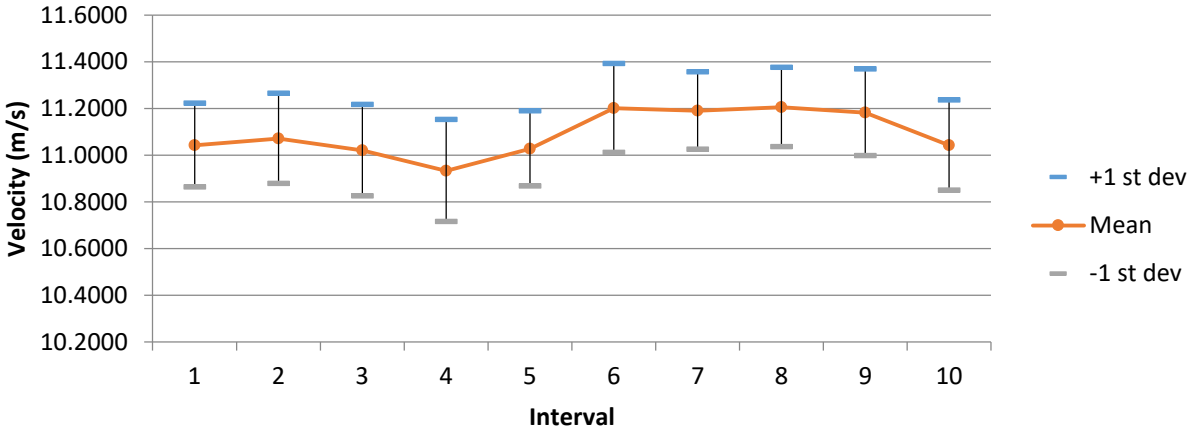
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 140
Blockage Condition: existing Buildings.
Blower Frequency: 40 Hz
Inlet Probe Location: E3
First Sample Date: 14-Aug-13 First Sample Time: 10:26:37.875

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	0.0000	9.4259	3.4109	2.7242
u	0.0000	9.1300	3.1967	2.6530
v	-2.5300	1.7500	-0.0437	0.4835
w	-3.2900	0.3170	-0.9999	0.7500

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)	# Zero Values	% Zero Values
1	9.4259	8.4451	8.9451	0.1266	1.4158	0	0.00 %
2	9.3720	6.0827	7.9540	0.8657	10.8835	0	0.00 %
3	6.3696	3.5285	4.7552	0.8304	17.4623	0	0.00 %
4	4.6554	2.5493	3.3811	0.2144	6.3420	0	0.00 %
5	3.2698	2.5555	2.9183	0.1021	3.4989	0	0.00 %
6	2.8269	1.8819	2.3312	0.2235	9.5856	0	0.00 %
7	2.4414	1.4805	1.8286	0.1145	6.2613	38	0.30 %
8	2.6277	1.0946	1.5404	0.2811	18.2493	879	7.03 %
9	1.8466	0.6428	1.1890	0.1479	12.4384	523	4.18 %
10	1.5921	0.4683	0.9126	0.1735	19.0099	844	6.75 %
11	1.0988	0.0000	0.6326	0.1576	24.9114	6054	48.43 %
12	0.9114	0.1151	0.5155	0.1069	20.7387	9861	78.89 %
		Average	3.0753	0.2787	10.5147		
		St Dev	2.6835	0.259761	5.9370		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.5900	-0.3940	-2.2945	0.1374	0.7705	0.4581	1.5999	8.9696	5.3334
2	7.5824	-0.6664	-2.2781	0.8425	0.2662	0.3291	11.1106	3.5109	4.3402
3	4.5374	-0.0559	-1.3586	0.7929	0.3318	0.3548	17.4750	7.3125	7.8185
4	3.1871	-0.3882	-0.8923	0.1730	0.3132	0.4955	5.4277	9.8275	15.5463
5	2.7879	-0.1313	-0.7867	0.1122	0.2235	0.2370	4.0252	8.0186	8.5014
6	2.1932	-0.0575	-0.7693	0.1956	0.0975	0.1764	8.9176	4.4450	8.0438
7	1.6180	0.2415	-0.7325	0.1654	0.2722	0.2064	10.2258	16.8229	12.7547
8	1.2928	0.4647	-0.5962	0.1208	0.3522	0.2653	9.3462	27.2436	20.5233
9	1.0183	0.3205	-0.4029	0.1178	0.2798	0.2037	11.5690	27.4751	20.0089
10	0.7394	0.0617	-0.4292	0.1384	0.3009	0.1361	18.7120	40.6914	18.4035
11	0.5080	0.2680	-0.1839	0.1126	0.1698	0.1408	22.1673	33.4283	27.7280
12	0.4098	0.2678	0.0097	0.0892	0.1192	0.1235	21.7736	29.0831	30.1335

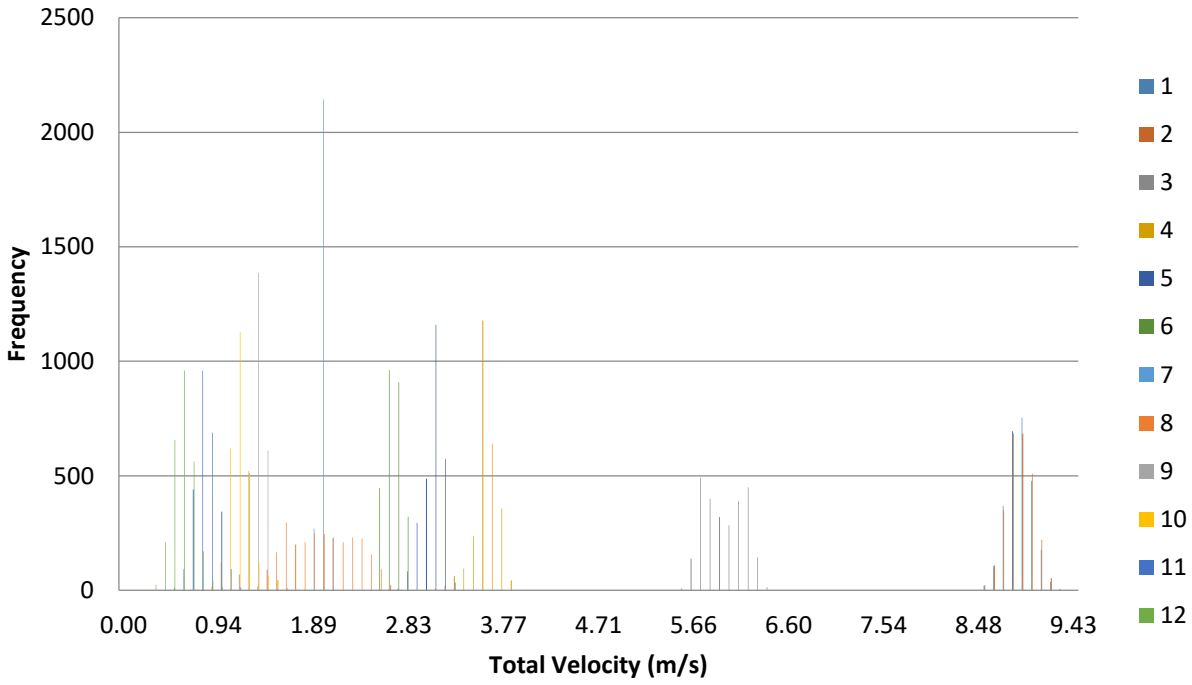


Figure 1. Velocity histogram for each interval (100 bins).

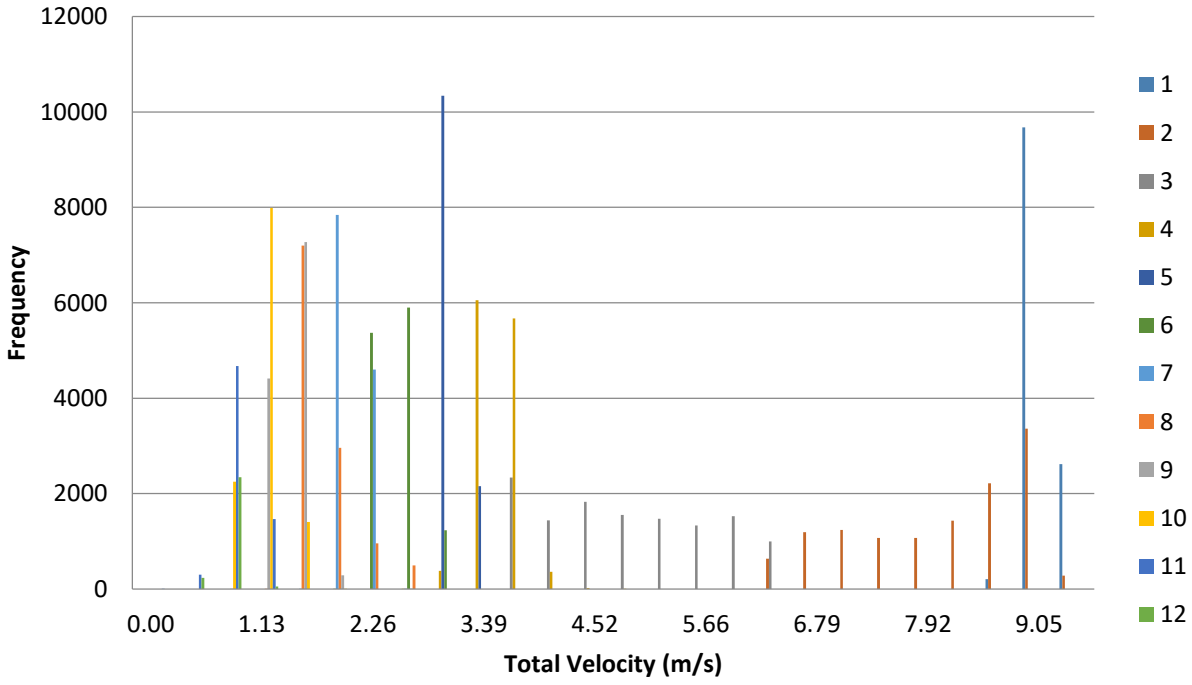
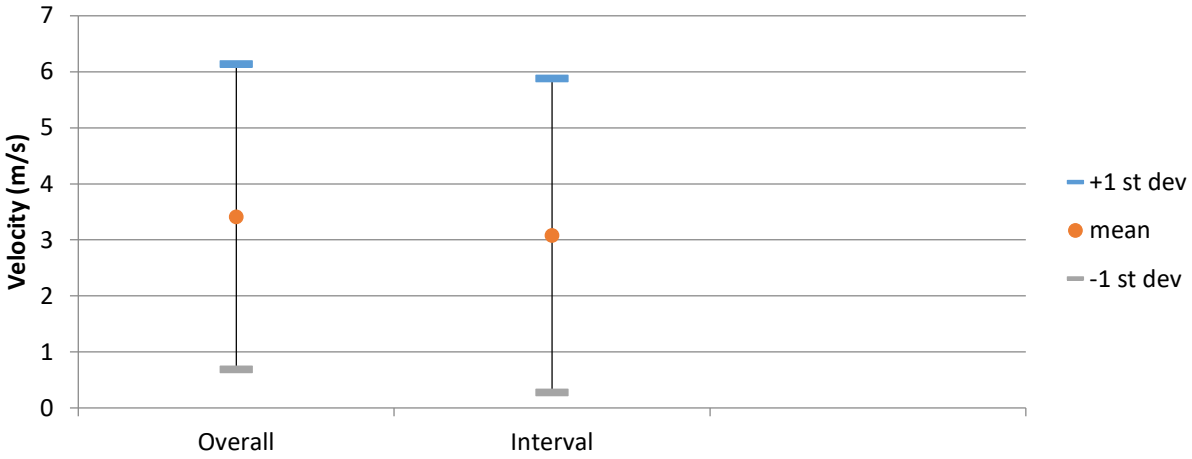
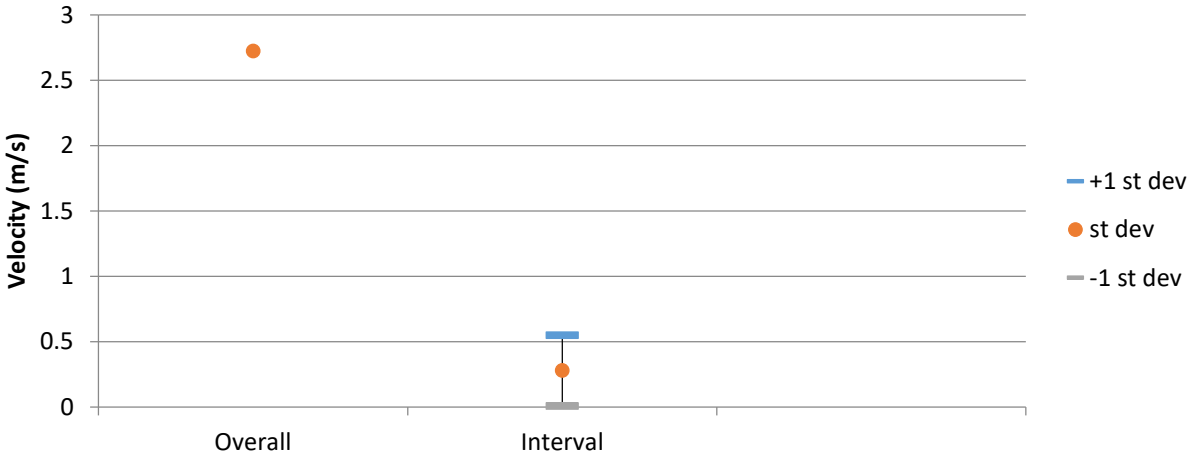


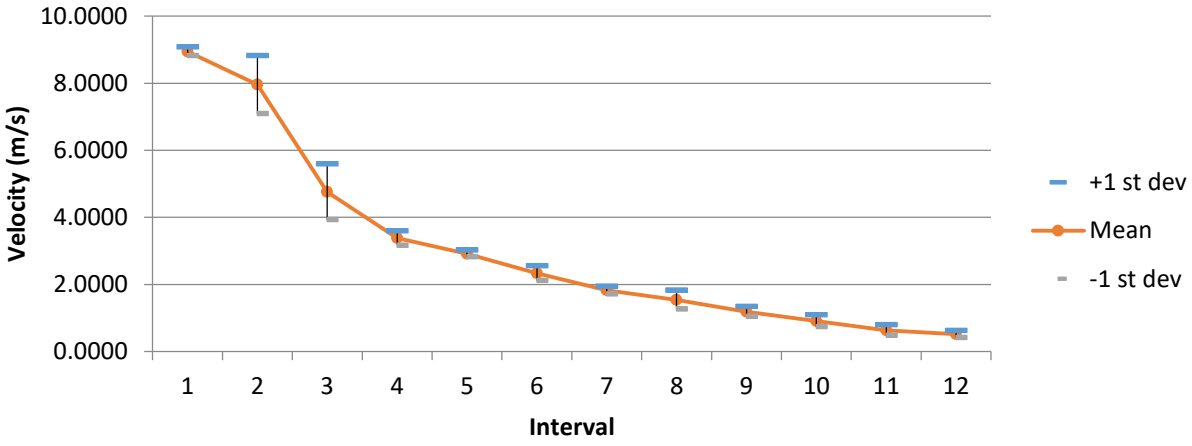
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 141
Blockage Condition: Existing Buildings
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 19-Aug-13 First Sample Time: 08:11:19.156

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.2237	11.5951	10.9039	0.1543
u	9.9200	11.3000	10.5998	0.1604
v	-1.7300	0.4250	-0.6722	0.3260
w	-3.6900	-1.4200	-2.4186	0.3620

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.4744	10.4092	10.9428	0.1383	1.2638
2	11.5246	10.3493	10.9474	0.1403	1.2817
3	11.4657	10.3052	10.8761	0.1540	1.4156
4	11.3260	10.3088	10.8323	0.1503	1.3878
5	11.4232	10.2431	10.8357	0.1517	1.4001
6	11.4260	10.2237	10.8836	0.1507	1.3851
7	11.4265	10.2741	10.9187	0.1481	1.3564
8	11.5777	10.3851	10.9126	0.1456	1.3342
9	11.5951	10.4166	10.9704	0.1579	1.4392
10	11.4844	10.3516	10.9374	0.1451	1.3264
11	11.4413	10.3459	10.8844	0.1529	1.4044
12	11.4864	10.3572	10.9056	0.1475	1.3529
		Average	10.9039	0.1485	1.3623
		St Dev	0.0433	0.0056	0.0512

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.6171	-0.4561	-2.5971	0.1442	0.2165	0.1468	1.3582	2.0396	1.3826
2	10.6639	-0.2022	-2.4570	0.1448	0.1430	0.1665	1.3583	1.3414	1.5617
3	10.6657	-0.2397	-2.1033	0.1568	0.1636	0.1546	1.4698	1.5338	1.4491
4	10.5919	-0.7681	-2.1128	0.1606	0.2414	0.1832	1.5159	2.2791	1.7292
5	10.5868	-0.8217	-2.1479	0.1552	0.1516	0.1418	1.4657	1.4323	1.3393
6	10.5450	-0.8055	-2.5367	0.1475	0.2448	0.3365	1.3987	2.3218	3.1912
7	10.4847	-0.8868	-2.8970	0.1437	0.1910	0.2697	1.3710	1.8220	2.5721
8	10.5387	-1.0358	-2.6186	0.1442	0.1947	0.2287	1.3686	1.8474	2.1697
9	10.5877	-0.7563	-2.7216	0.1572	0.3188	0.4137	1.4847	3.0113	3.9069
10	10.5935	-0.8345	-2.5687	0.1445	0.2271	0.2385	1.3637	2.1441	2.2514
11	10.6811	-0.6669	-1.9653	0.1557	0.2120	0.1766	1.4578	1.9850	1.6534
12	10.6409	-0.5929	-2.2964	0.1486	0.2140	0.1762	1.3963	2.0110	1.6563

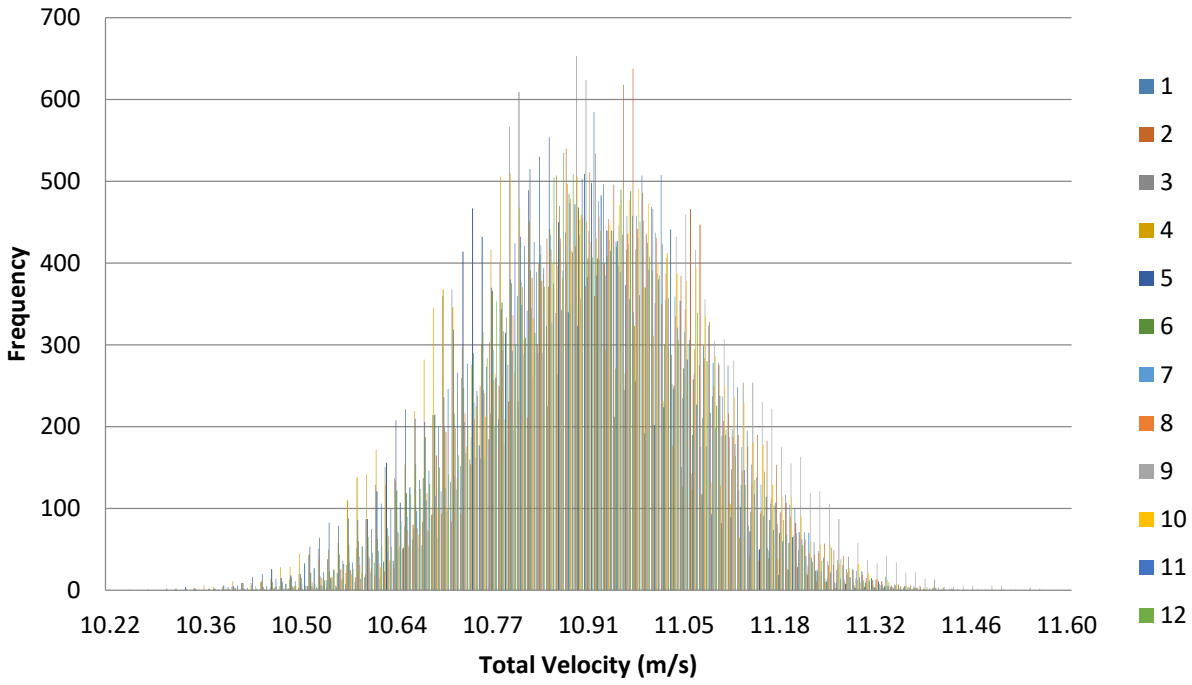


Figure 1. Velocity histogram for each interval (100 bins).

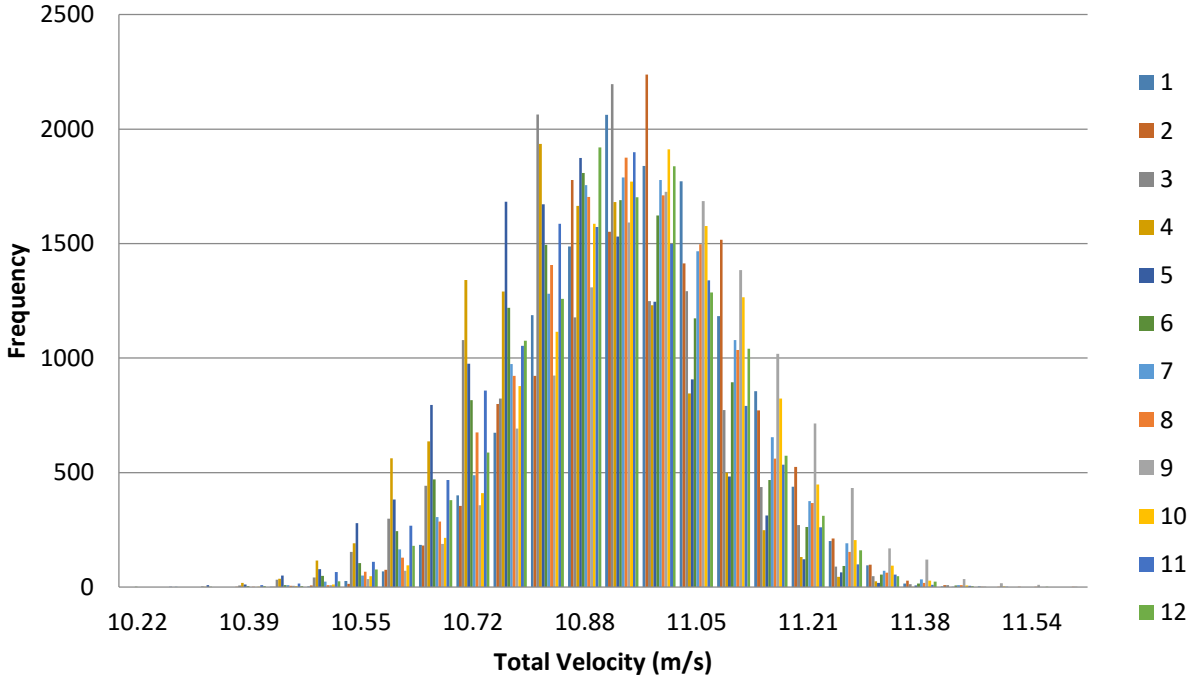
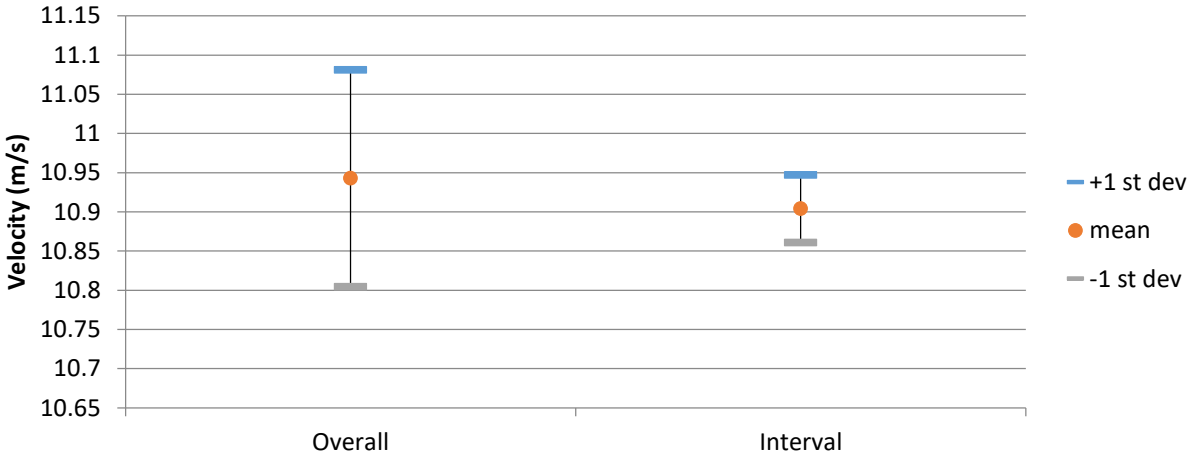
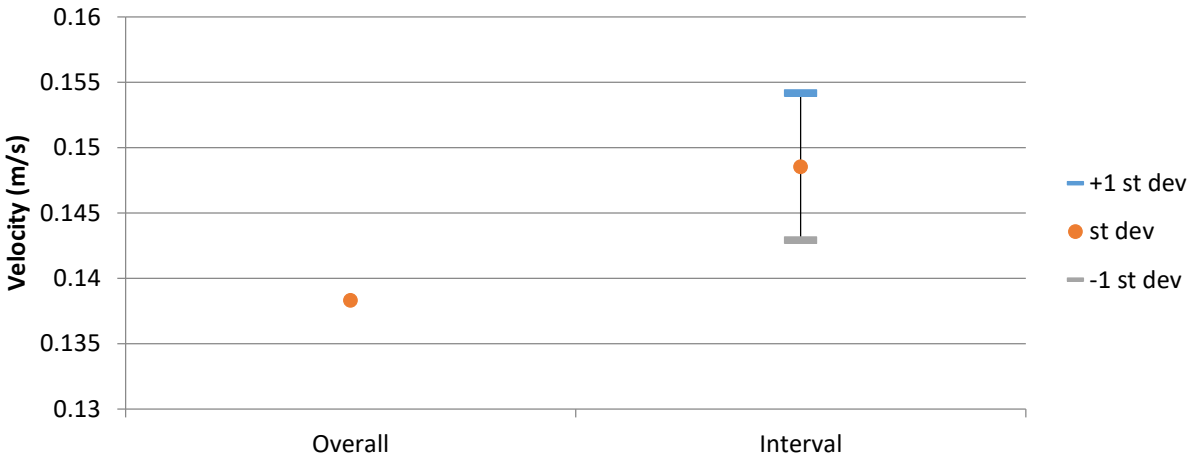


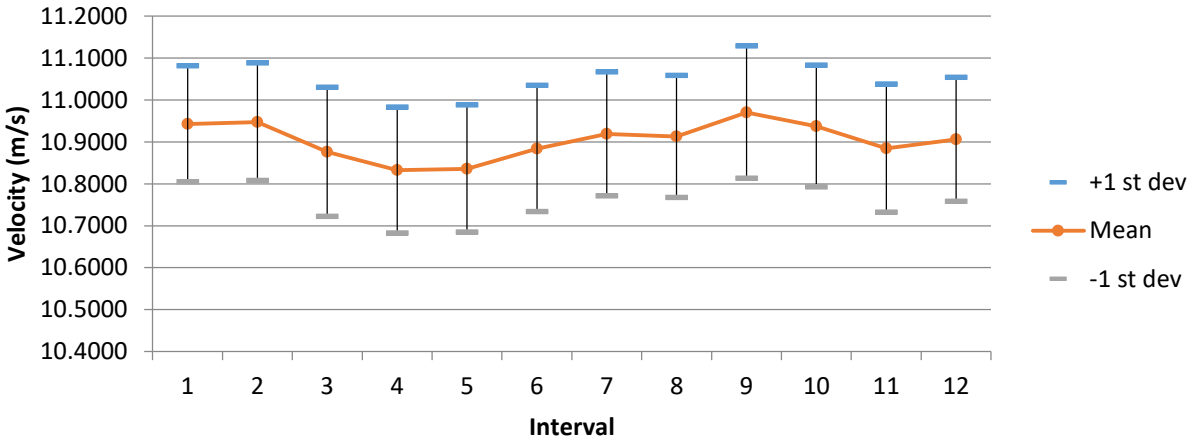
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 142
Blockage Condition: Existing Buildings
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 19-Aug-13 First Sample Time: 08:16:17.484

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.0831	11.6388	10.8830	0.1729
u	9.5500	11.3000	10.5597	0.1857
v	-2.5800	2.1200	-0.4213	0.6780
w	-4.4200	-0.7940	-2.4275	0.6295

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.3727	10.3498	10.8562	0.1463	1.3473
2	11.4996	10.2910	10.9061	0.1544	1.4153
3	11.5328	10.3166	10.8761	0.1565	1.4390
4	11.6088	10.2573	10.8970	0.1705	1.5642
5	11.5314	10.0831	10.8245	0.1652	1.5261
6	11.4048	10.3019	10.8408	0.1560	1.4390
7	11.3460	10.2073	10.7940	0.1496	1.3856
8	11.3652	10.1800	10.8010	0.1567	1.4506
9	11.4469	10.1558	10.8635	0.1596	1.4694
10	11.6358	10.3013	10.9474	0.1655	1.5119
11	11.6300	10.2636	10.9835	0.1715	1.5617
12	11.6388	10.2822	11.0055	0.1675	1.5224
		Average	10.8830	0.1599	1.4694
		St Dev	0.0681	0.0081	0.0661

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.5738	-0.4961	-2.3959	0.1503	0.1917	0.1679	1.4218	1.8130	1.5882
2	10.5487	-0.5104	-2.6881	0.1593	0.2652	0.3319	1.5103	2.5138	3.1465
3	10.4682	-0.6792	-2.8269	0.1648	0.2828	0.4119	1.5743	2.7015	3.9346
4	10.6037	-1.2049	-2.1011	0.1839	0.3451	0.5624	1.7338	3.2547	5.3035
5	10.5307	-1.4298	-1.9517	0.1674	0.3305	0.5566	1.5898	3.1389	5.2850
6	10.6793	-0.6089	-1.7052	0.1606	0.2578	0.3605	1.5041	2.4145	3.3758
7	10.5891	-0.5267	-2.0038	0.1561	0.1759	0.2337	1.4743	1.6609	2.2069
8	10.6117	-0.4444	-1.9523	0.1583	0.1691	0.1317	1.4922	1.5932	1.2414
9	10.5505	-0.4897	-2.4766	0.1652	0.2750	0.5024	1.5656	2.6065	4.7619
10	10.5667	-0.0960	-2.7932	0.1662	0.3947	0.4736	1.5725	3.7353	4.4820
11	10.3740	0.6747	-3.5141	0.2191	0.3730	0.2335	2.1123	3.5957	2.2509
12	10.6202	0.7551	-2.7225	0.1763	0.3882	0.4426	1.6597	3.6555	4.1680

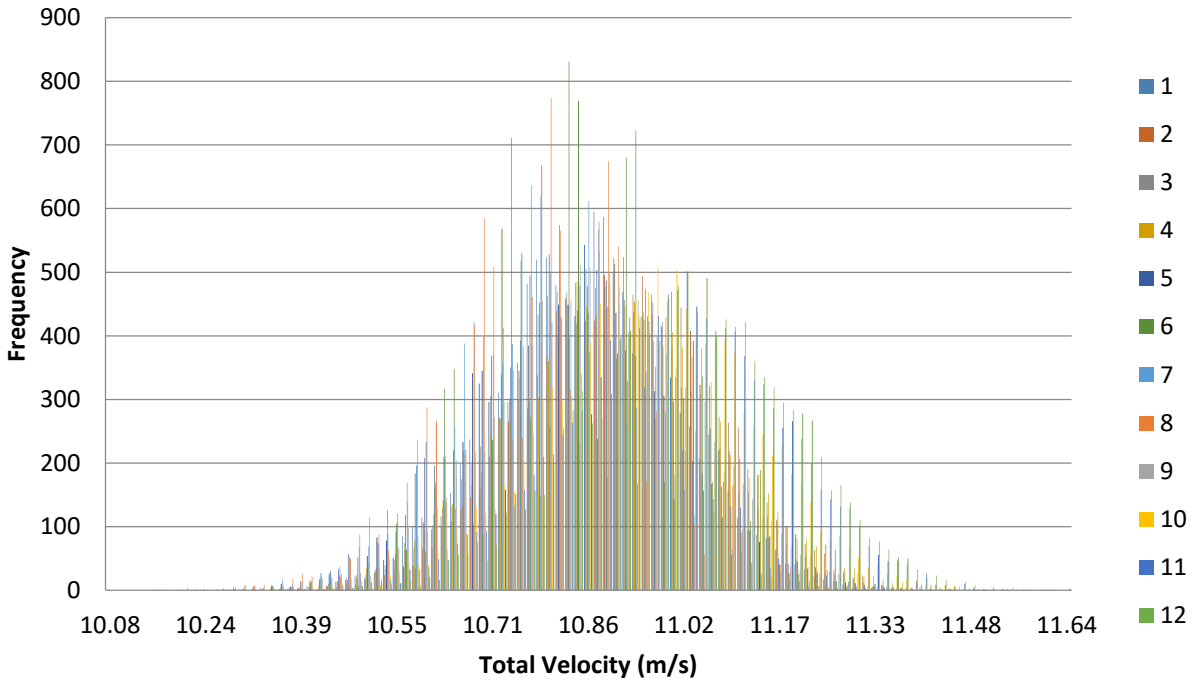


Figure 1. Velocity histogram for each interval (100 bins).

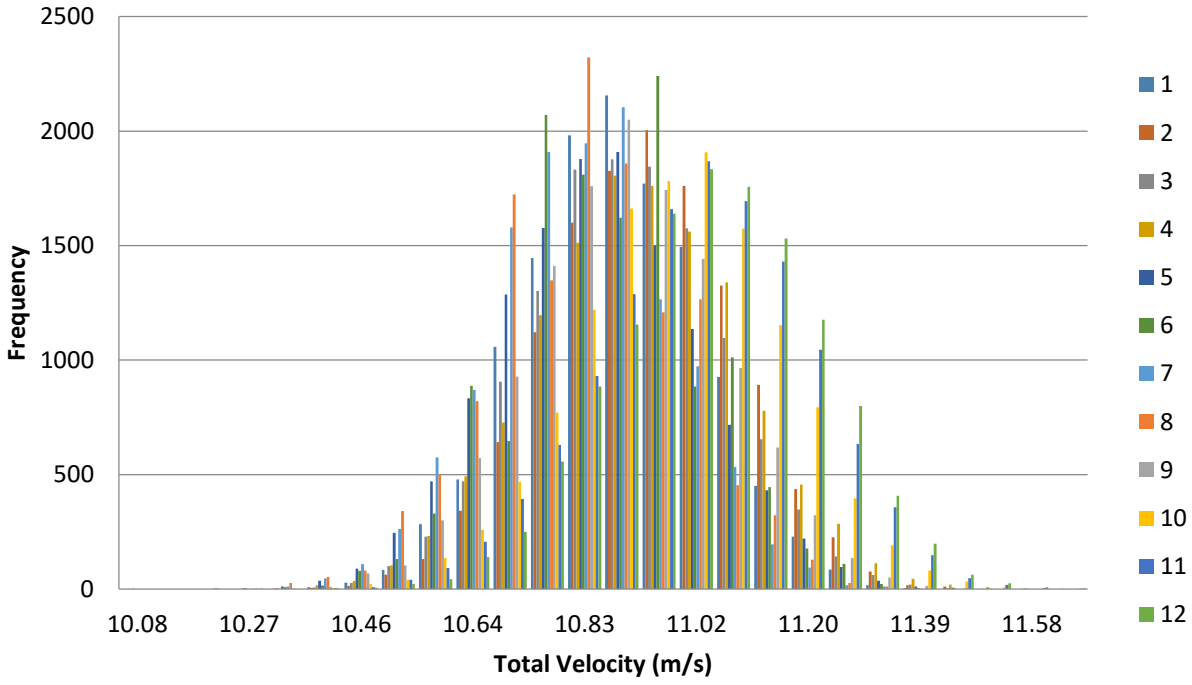
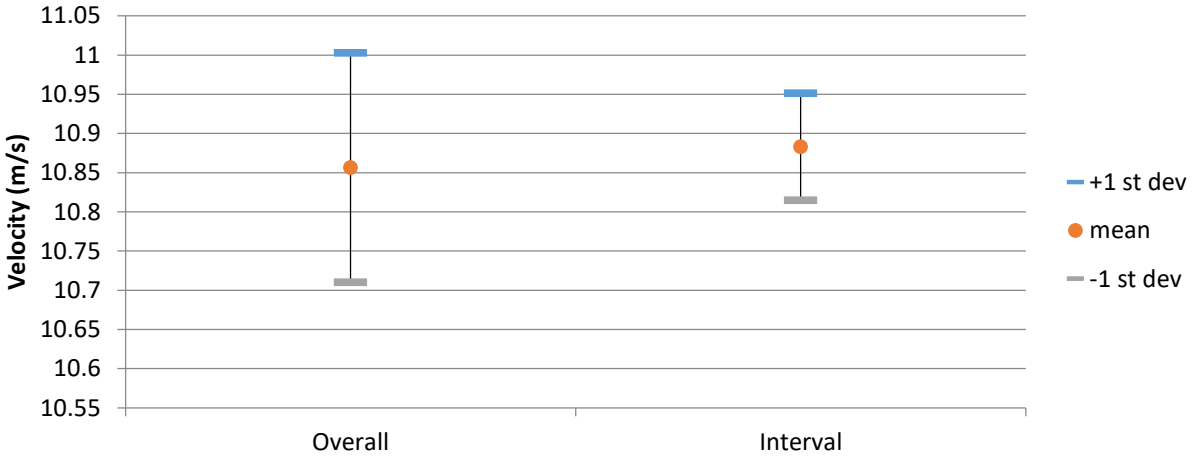
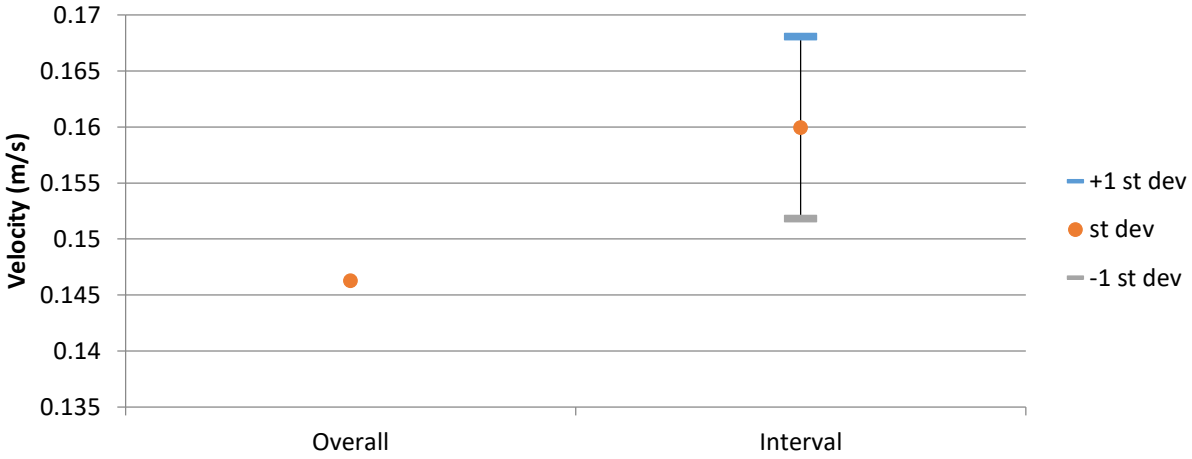


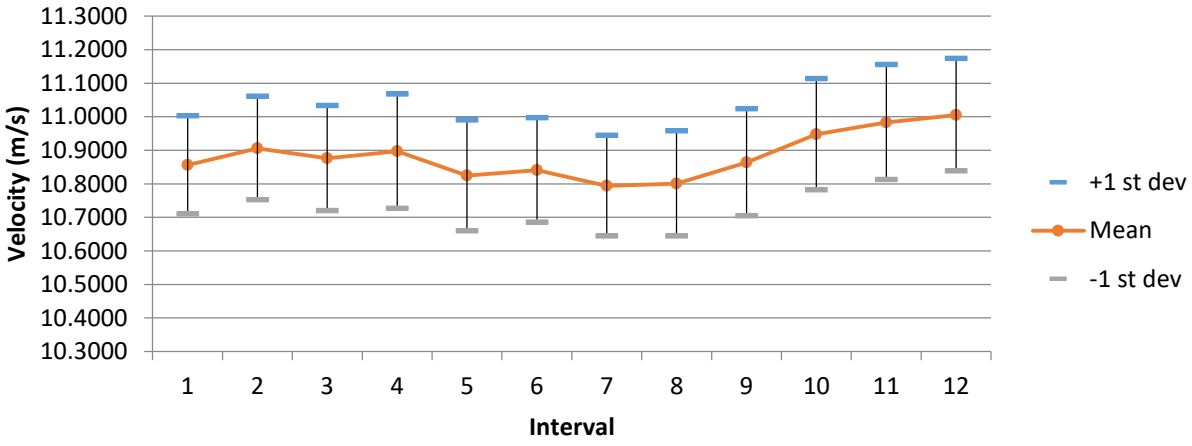
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 143
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 19-Aug-13 First Sample Time: 08:21:53.265

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.2981	12.2260	11.0641	0.1996
u	9.3800	11.6000	10.7475	0.2181
v	-2.4800	3.2900	-0.4143	0.8364
w	-5.0100	-0.0262	-2.3702	0.6394

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.5909	10.2981	10.9593	0.1591	1.4513
2	11.6539	10.3193	11.0035	0.1639	1.4898
3	11.5025	10.3041	10.9293	0.1618	1.4804
4	11.6013	10.3437	10.9911	0.1707	1.5528
5	11.8258	10.4121	11.0618	0.1782	1.6108
6	11.7015	10.3818	11.1045	0.1837	1.6540
7	11.5609	10.4092	11.0226	0.1604	1.4556
8	11.6431	10.4060	11.0530	0.1665	1.5065
9	11.6270	10.3803	11.0090	0.1595	1.4488
10	11.7332	10.5585	11.1805	0.1484	1.3276
11	11.9209	10.5497	11.2327	0.1787	1.5910
12	12.2260	10.4674	11.2218	0.2469	2.1998
		Average	11.0641	0.1731	1.5640
		St Dev	0.1007	0.0253	0.2091

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.7610	-0.6704	-1.9038	0.1629	0.4241	0.2272	1.5135	3.9411	2.1115
2	10.6476	-1.2327	-2.4397	0.1551	0.3752	0.3119	1.4565	3.5242	2.9289
3	10.6858	-0.3720	-2.0844	0.1803	0.7772	0.4119	1.6872	7.2733	3.8547
4	10.7948	-0.5679	-1.7720	0.1905	0.7376	0.5138	1.7646	6.8330	4.7600
5	10.5599	-1.6264	-2.8192	0.1471	0.2764	0.4404	1.3931	2.6175	4.1706
6	10.6532	-0.5729	-3.0097	0.1611	0.4415	0.4951	1.5126	4.1445	4.6472
7	10.7991	-0.0748	-2.1111	0.1668	0.4522	0.4549	1.5446	4.1869	4.2127
8	10.7752	-0.8020	-2.2435	0.1592	0.4670	0.4143	1.4777	4.3338	3.8449
9	10.8437	0.2441	-1.8530	0.1640	0.2565	0.2254	1.5127	2.3659	2.0786
10	10.9116	-0.1529	-2.4142	0.1411	0.2317	0.1934	1.2930	2.1236	1.7725
11	10.9289	-0.1922	-2.5514	0.1466	0.2486	0.3671	1.3414	2.2744	3.3588
12	10.6092	1.0459	-3.2400	0.3611	0.9189	0.9319	3.4036	8.6616	8.7844

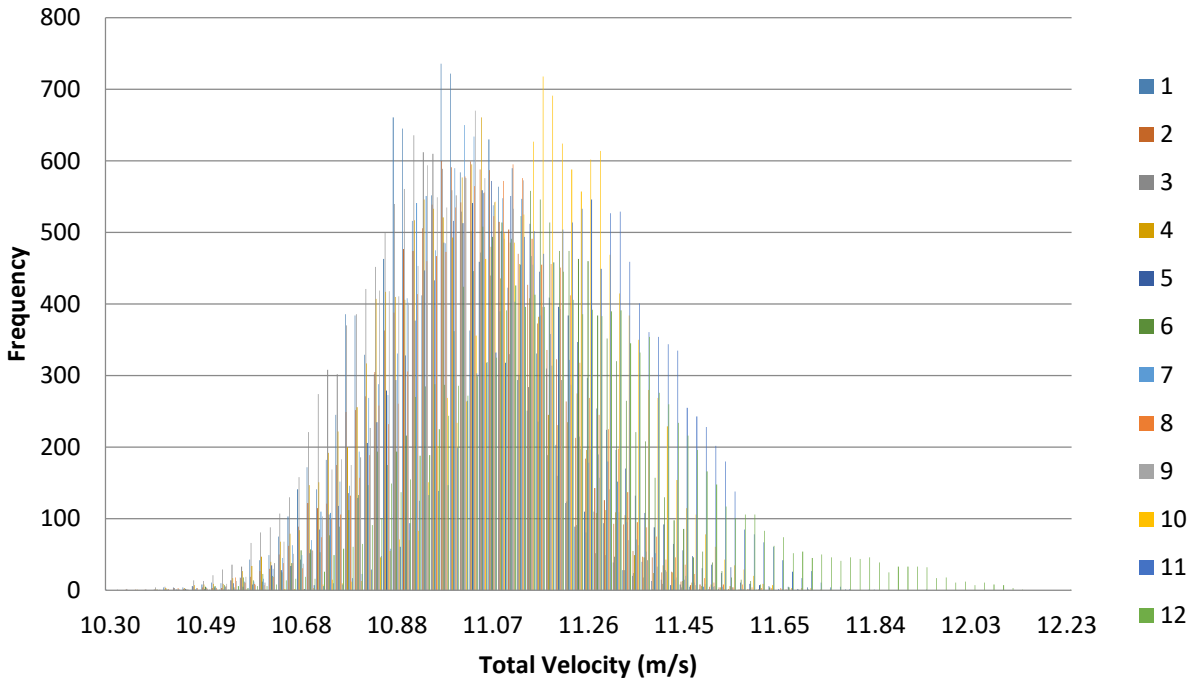


Figure 1. Velocity histogram for each interval (100 bins).

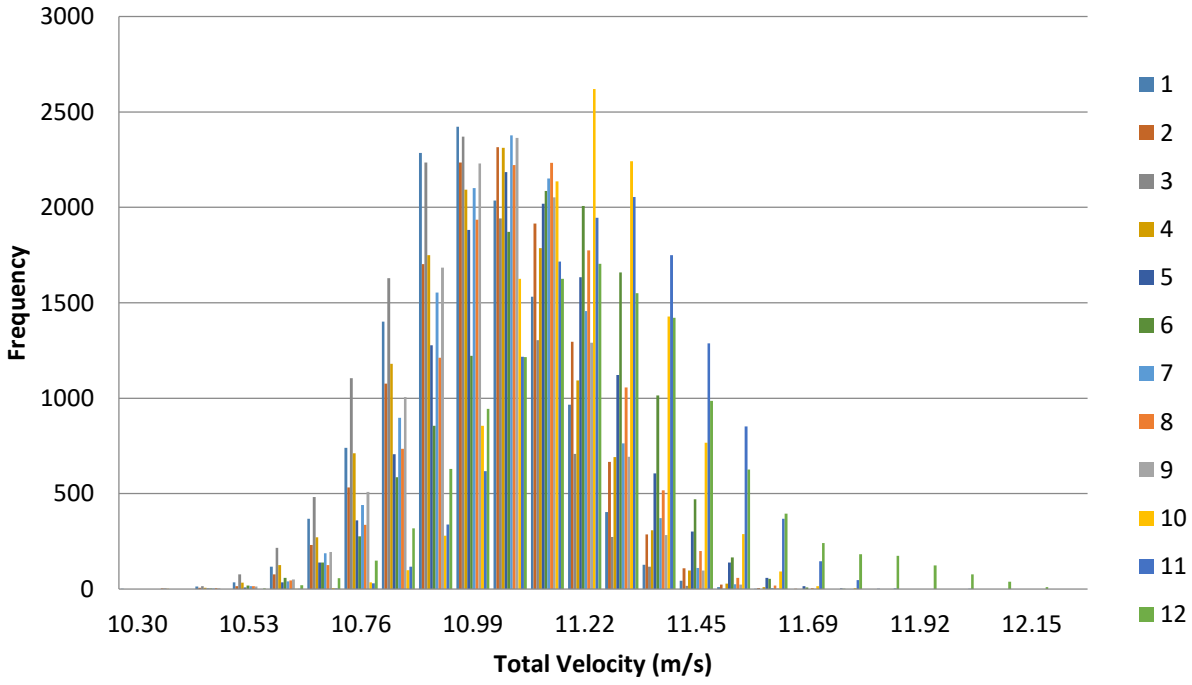
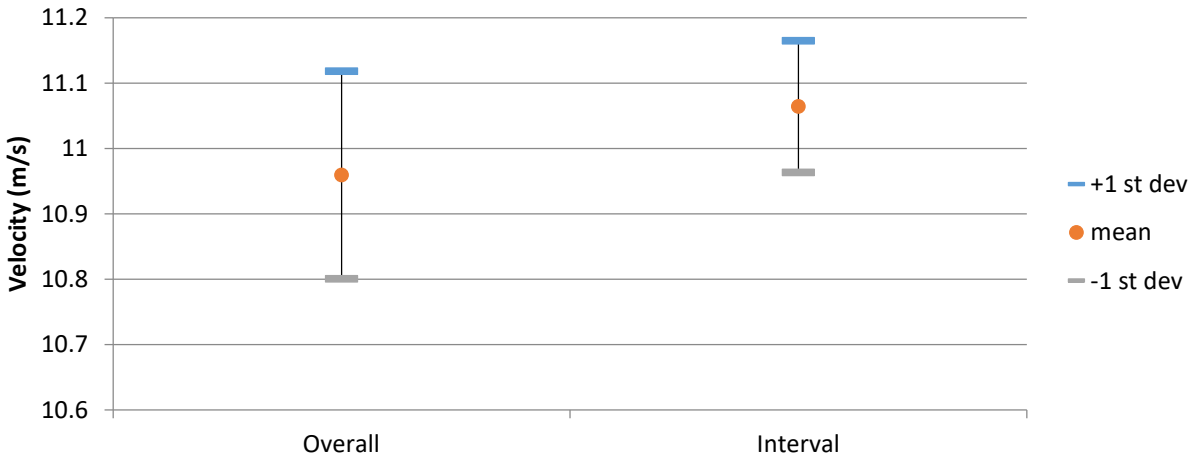
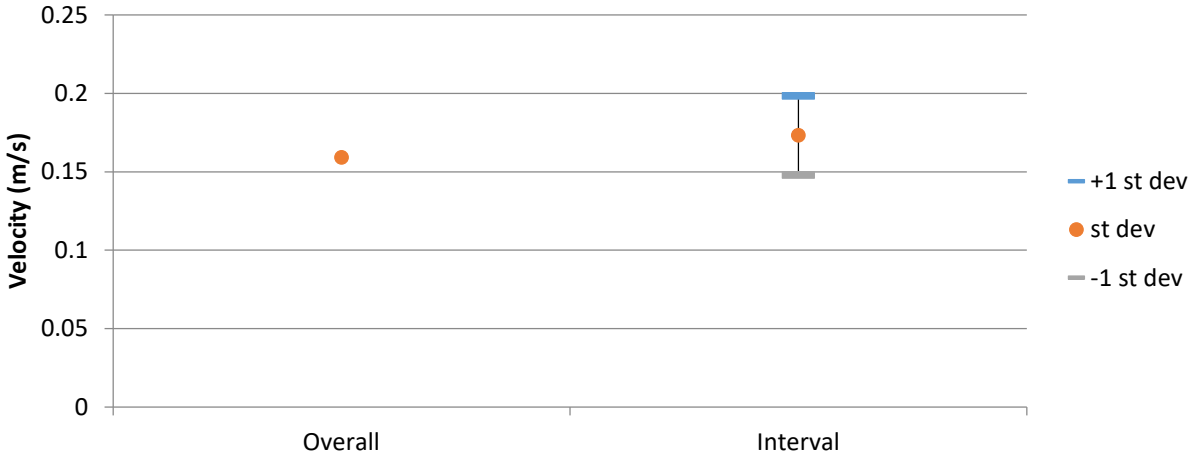


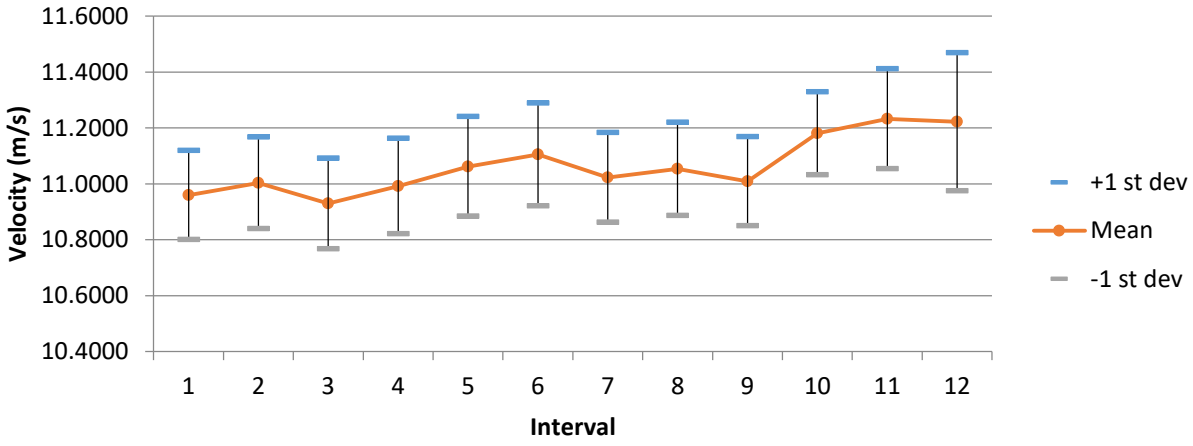
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 144
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 19-Aug-13 First Sample Time: 08:27:49.187

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.1554	11.8093	10.9963	0.1760
u	9.2500	11.4000	10.5944	0.1948
v	-2.3000	2.8600	0.0223	0.5306
w	-5.2900	-0.6370	-2.8403	0.5668

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.6339	10.2612	10.9966	0.1651	1.5014
2	11.6042	10.3887	10.9824	0.1460	1.3294
3	11.5934	10.1554	10.9911	0.1734	1.5775
4	11.6239	10.1927	10.9709	0.1653	1.5072
5	11.5958	10.2432	10.9714	0.1701	1.5503
6	11.5379	10.3485	10.9474	0.1603	1.4641
7	11.6699	10.3499	10.9771	0.1802	1.6413
8	11.6841	10.3153	11.0013	0.1818	1.6524
9	11.8093	10.2910	11.0211	0.1919	1.7416
10	11.8093	10.3553	11.0553	0.1889	1.7089
11	11.5586	10.4304	11.0220	0.1612	1.4629
12	11.6609	10.2196	11.0190	0.1939	1.7599
		Average	10.9963	0.1732	1.5747
		St Dev	0.0294	0.0146	0.1245

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.5860	-0.4442	-2.8978	0.1615	0.3162	0.4112	1.5257	2.9873	3.8847
2	10.6160	-0.2865	-2.7681	0.1540	0.3067	0.2714	1.4505	2.8886	2.5562
3	10.5590	0.2160	-2.9737	0.2146	0.3673	0.5222	2.0321	3.4786	4.9454
4	10.5853	0.5055	-2.7346	0.1666	0.6607	0.3775	1.5739	6.2420	3.5662
5	10.5363	-0.2560	-2.9539	0.1523	0.5580	0.5117	1.4452	5.2963	4.8570
6	10.6415	0.0489	-2.5051	0.1572	0.3927	0.4151	1.4768	3.6901	3.9003
7	10.5372	0.1562	-2.9613	0.2373	0.3793	0.7093	2.2516	3.5994	6.7310
8	10.6764	0.0546	-2.5019	0.1973	0.3930	0.7877	1.8477	3.6812	7.3783
9	10.6040	0.2637	-2.8478	0.2030	0.7293	0.5529	1.9144	6.8774	5.2136
10	10.6151	0.1762	-2.9963	0.1907	0.3485	0.6391	1.7962	3.2835	6.0211
11	10.6511	0.0559	-2.8069	0.1474	0.2673	0.2965	1.3843	2.5092	2.7839
12	10.5256	-0.2241	-3.1343	0.2513	0.5458	0.6576	2.3876	5.1855	6.2476

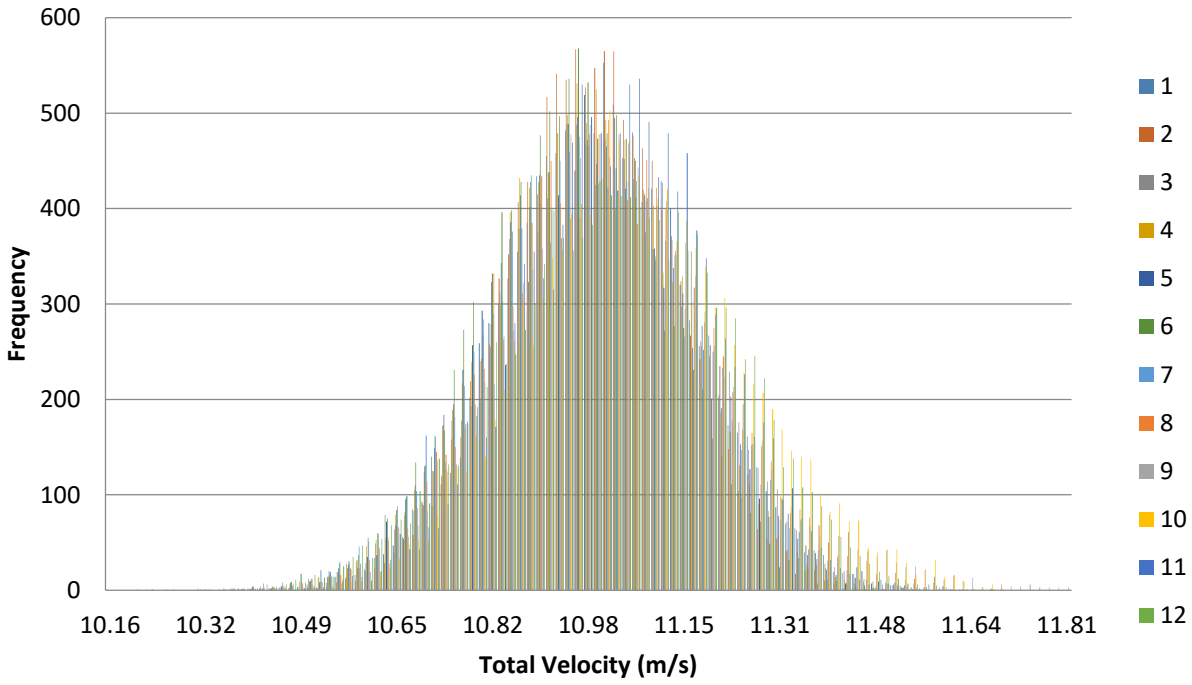


Figure 1. Velocity histogram for each interval (100 bins).

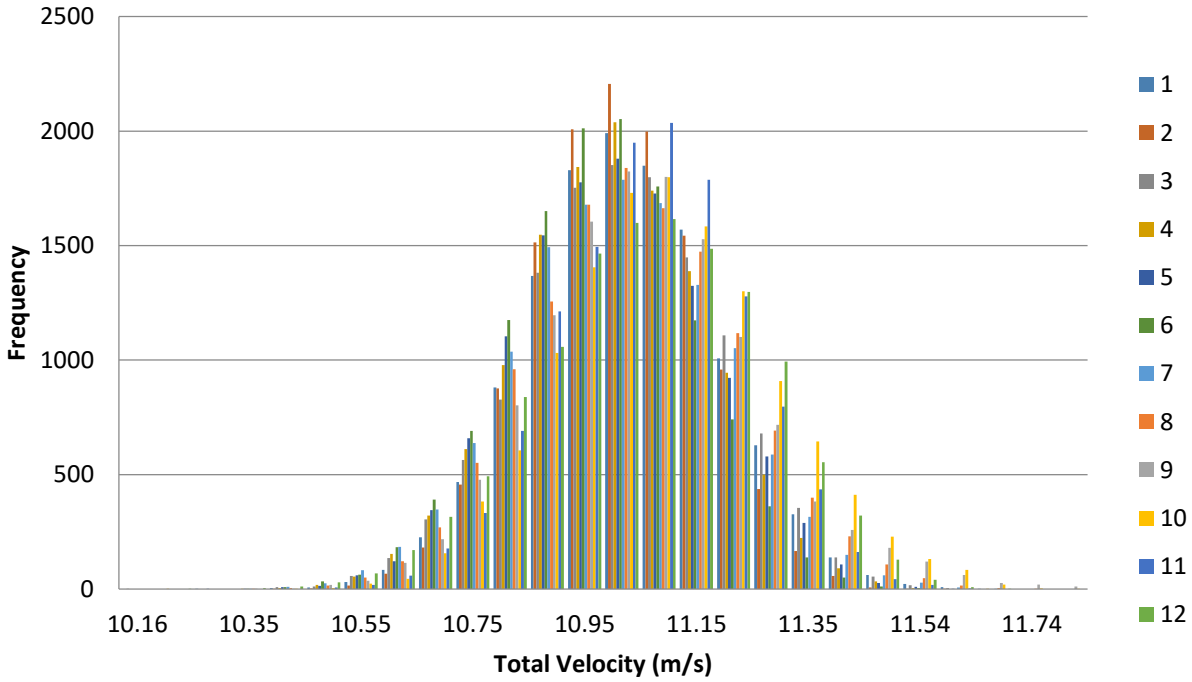
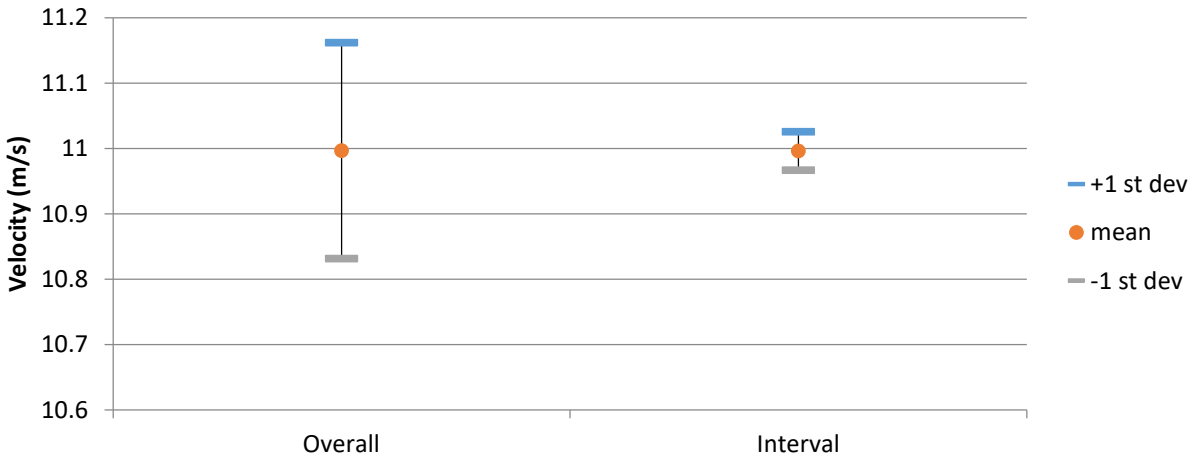
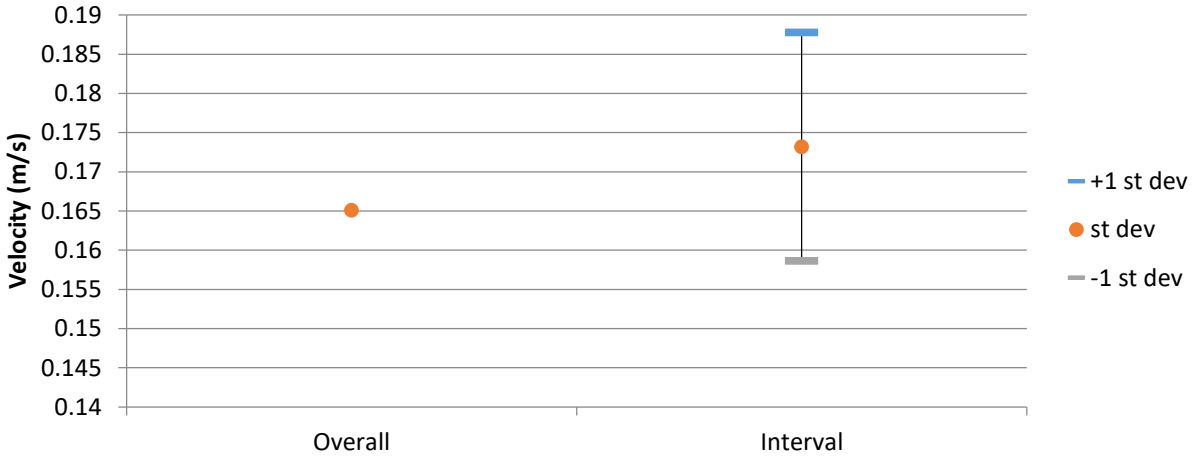


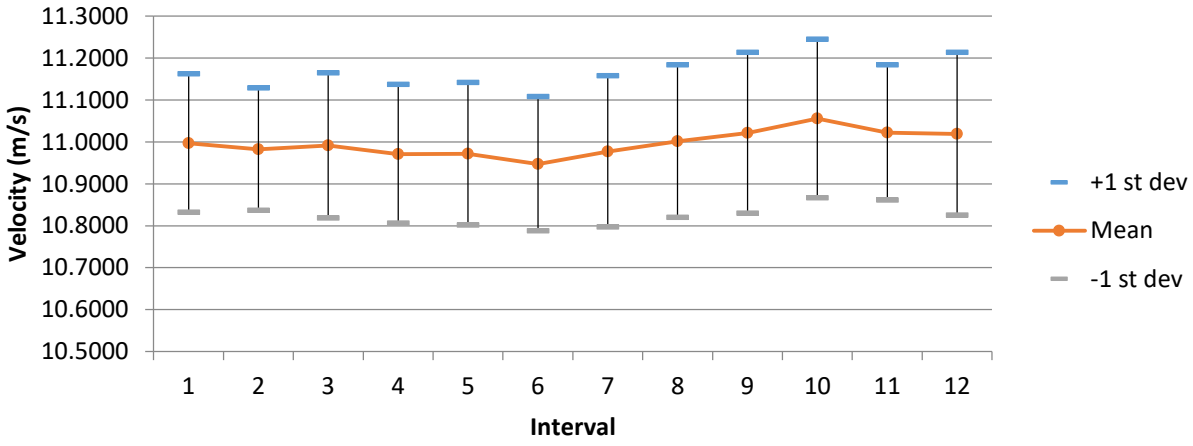
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 145
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 19-Aug-13 First Sample Time: 08:34:30.937

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.2179	12.0638	10.9740	0.1734
u	9.5200	11.6000	10.6043	0.1852
v	-2.3500	2.6100	-0.2115	0.6303
w	-4.8300	0.0833	-2.6814	0.5838

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.6012	10.3426	11.0104	0.1561	1.4179
2	11.6912	10.4517	11.0087	0.1540	1.3989
3	11.6056	10.3251	11.0181	0.1568	1.4231
4	11.5686	10.4006	10.9778	0.1508	1.3738
5	11.4681	10.4270	10.9689	0.1453	1.3244
6	11.5401	10.4044	10.9721	0.1618	1.4749
7	11.5379	10.3499	10.9757	0.1573	1.4329
8	11.4652	10.2839	10.8915	0.1538	1.4123
9	11.7824	10.2866	10.9296	0.1987	1.8179
10	12.0638	10.2179	10.9949	0.2335	2.1234
11	11.5822	10.2756	10.9662	0.1698	1.5488
12	11.6708	10.2974	10.9740	0.1815	1.6539
		Average	10.9740	0.1683	1.5335
		St Dev	0.0354	0.0253	0.2207

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.6585	0.5081	-2.6706	0.1680	0.2914	0.3828	1.5758	2.7343	3.5918
2	10.6159	-0.3352	-2.8538	0.1489	0.3431	0.3468	1.4028	3.2322	3.2669
3	10.6169	-0.1298	-2.9177	0.1544	0.2396	0.3039	1.4538	2.2568	2.8623
4	10.5926	0.0186	-2.8535	0.1514	0.2923	0.2872	1.4297	2.7590	2.7110
5	10.6396	-0.1920	-2.6411	0.1486	0.1842	0.2602	1.3963	1.7309	2.4459
6	10.6290	-0.1336	-2.6618	0.1558	0.3673	0.4164	1.4660	3.4553	3.9179
7	10.6092	-0.1895	-2.7582	0.1581	0.2788	0.4352	1.4903	2.6282	4.1018
8	10.5910	-0.6374	-2.3976	0.1584	0.3870	0.3845	1.4953	3.6537	3.6302
9	10.5548	-0.9191	-2.4231	0.2180	0.6085	0.9789	2.0659	5.7654	9.2746
10	10.6929	0.4851	-2.2252	0.2348	0.8088	0.8412	2.1955	7.5641	7.8669
11	10.5595	-0.4446	-2.7833	0.1992	0.5931	0.6700	1.8864	5.6168	6.3446
12	10.4918	-0.5674	-2.9908	0.2124	0.8370	0.6096	2.0243	7.9778	5.8099

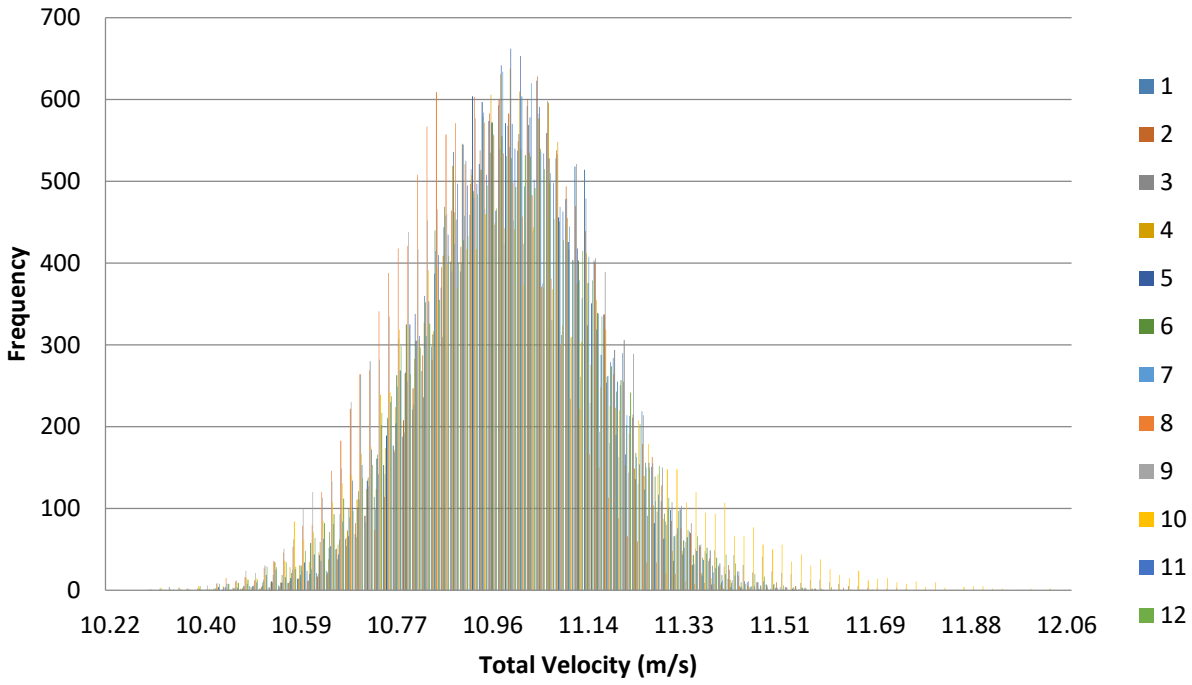


Figure 1. Velocity histogram for each interval (100 bins).

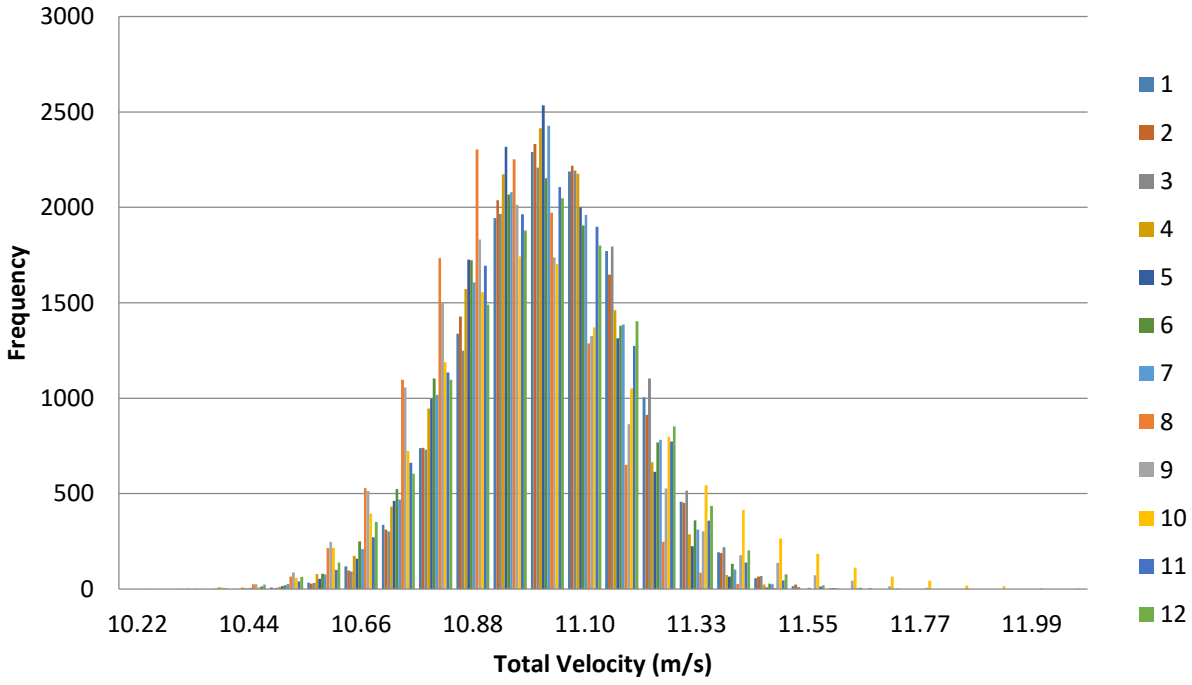
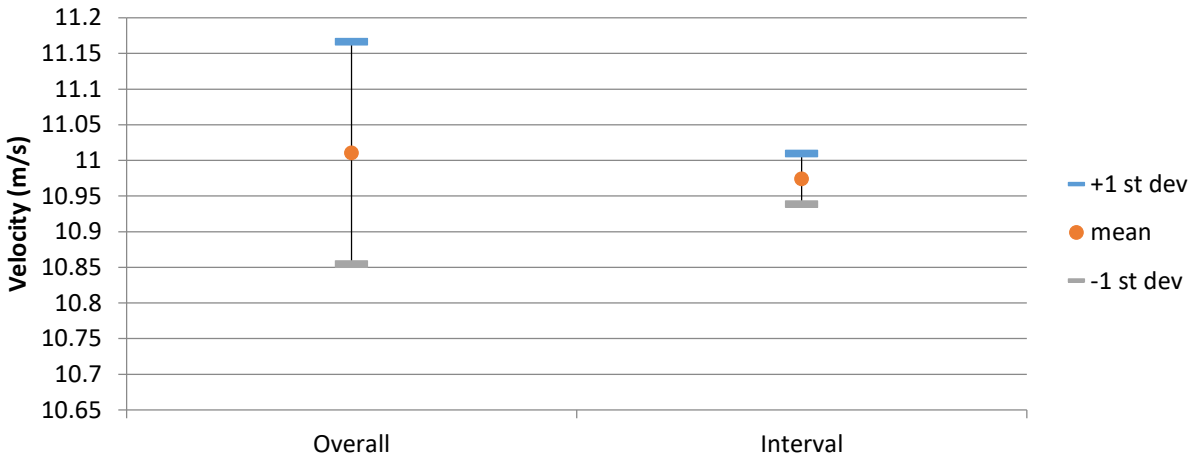
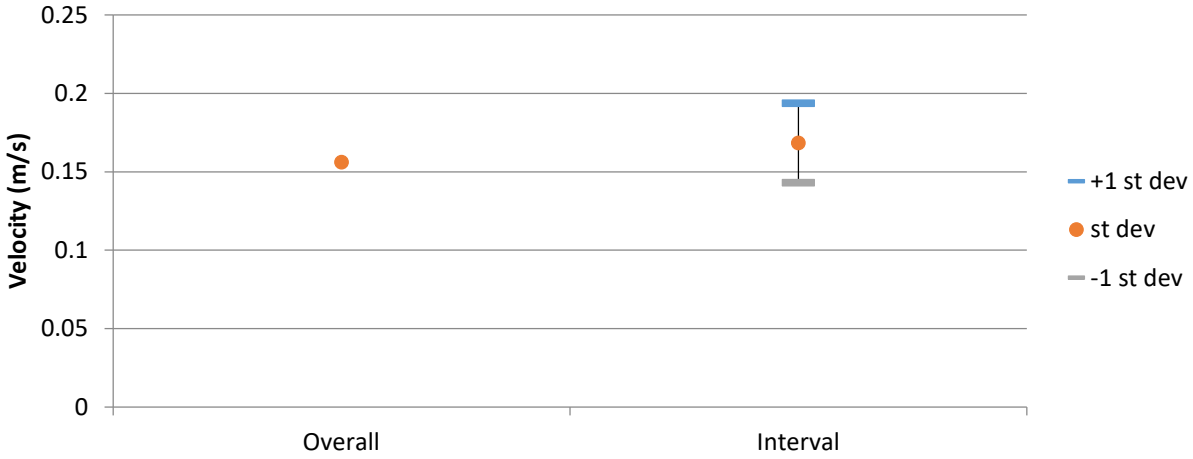


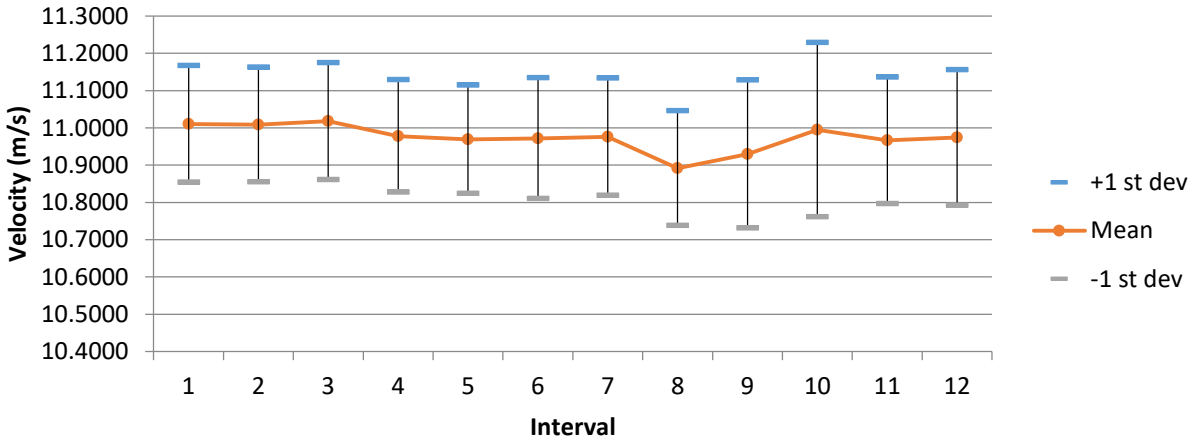
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 146
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 19-Aug-13 First Sample Time: 08:37:57.031

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	9.7791	12.5176	11.1162	0.2109
u	8.6900	11.7000	10.6754	0.2666
v	-2.7000	4.1100	0.6080	0.6474
w	-6.5800	0.1730	-2.8644	0.7654

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.6830	10.2942	11.0833	0.1614	1.4567
2	11.7311	10.4900	11.1521	0.1651	1.4800
3	11.6238	10.3234	11.0376	0.1810	1.6395
4	11.4741	10.3241	10.9421	0.1549	1.4158
5	11.8162	10.3284	11.1129	0.1867	1.6799
6	11.8941	10.3668	11.1474	0.1829	1.6408
7	12.5064	9.7791	11.1961	0.2433	2.1733
8	12.5176	9.8251	11.0817	0.2034	1.8358
9	12.2728	10.0514	11.1423	0.2214	1.9872
10	12.2355	10.0680	11.1464	0.2523	2.2633
11	12.2225	10.3963	11.2134	0.2176	1.9405
12	12.1014	10.4961	11.1390	0.1892	1.6989
		Average	11.1162	0.1966	1.7676
		St Dev	0.0732	0.0315	0.2647

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.6609	0.3696	-2.9449	0.1769	0.4706	0.3847	1.6594	4.4147	3.6082
2	10.7183	0.6776	-2.9376	0.1694	0.4590	0.4296	1.5807	4.2821	4.0078
3	10.7131	0.3999	-2.5812	0.1503	0.2795	0.4105	1.4030	2.6088	3.8316
4	10.7607	0.2648	-1.9051	0.1647	0.3408	0.3430	1.5305	3.1667	3.1879
5	10.8571	0.7254	-2.0211	0.1883	0.6463	0.7677	1.7348	5.9524	7.0707
6	10.7610	0.5152	-2.7644	0.1795	0.5131	0.5447	1.6678	4.7678	5.0616
7	10.6645	1.0394	-3.0459	0.3199	0.7379	0.8217	2.9997	6.9192	7.7052
8	10.5881	0.3875	-3.1394	0.2732	0.5127	0.6271	2.5800	4.8421	5.9225
9	10.5155	0.8091	-3.4455	0.3154	0.8168	0.5758	2.9996	7.7674	5.4756
10	10.6431	0.5728	-3.0766	0.3540	0.6359	0.8406	3.3257	5.9750	7.8977
11	10.6128	0.6370	-3.3142	0.3474	0.9825	0.8248	3.2737	9.2581	7.7720
12	10.6095	0.8987	-3.1961	0.2435	0.5190	0.4482	2.2955	4.8921	4.2246

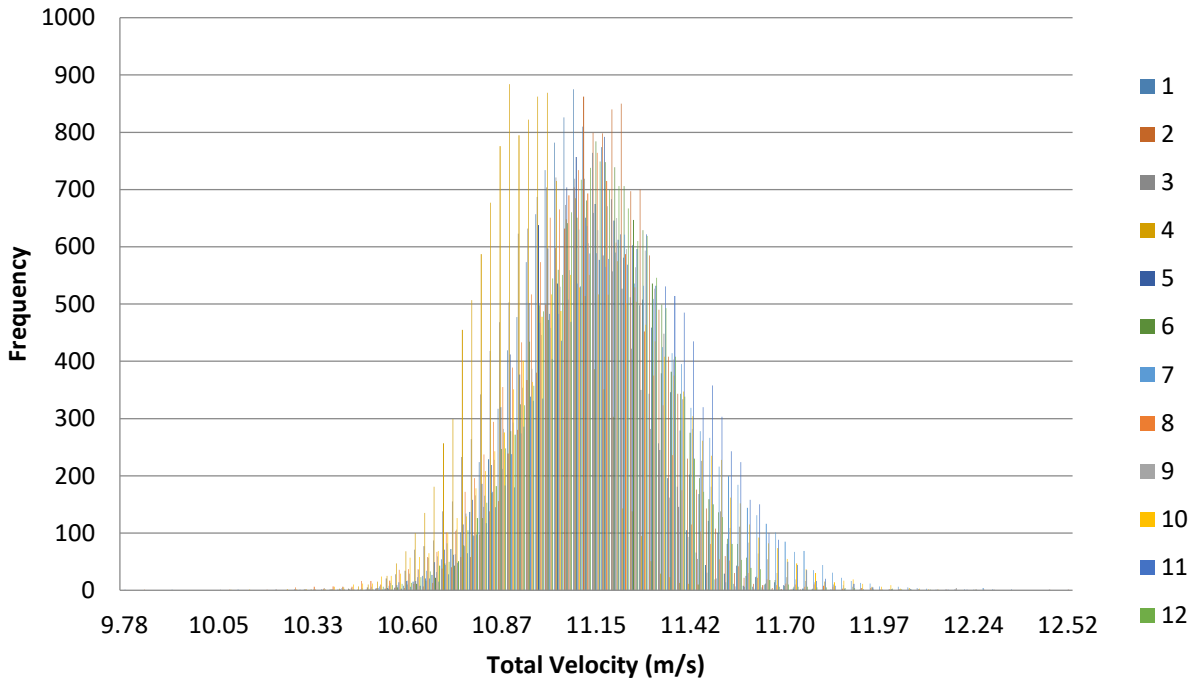


Figure 1. Velocity histogram for each interval (100 bins).

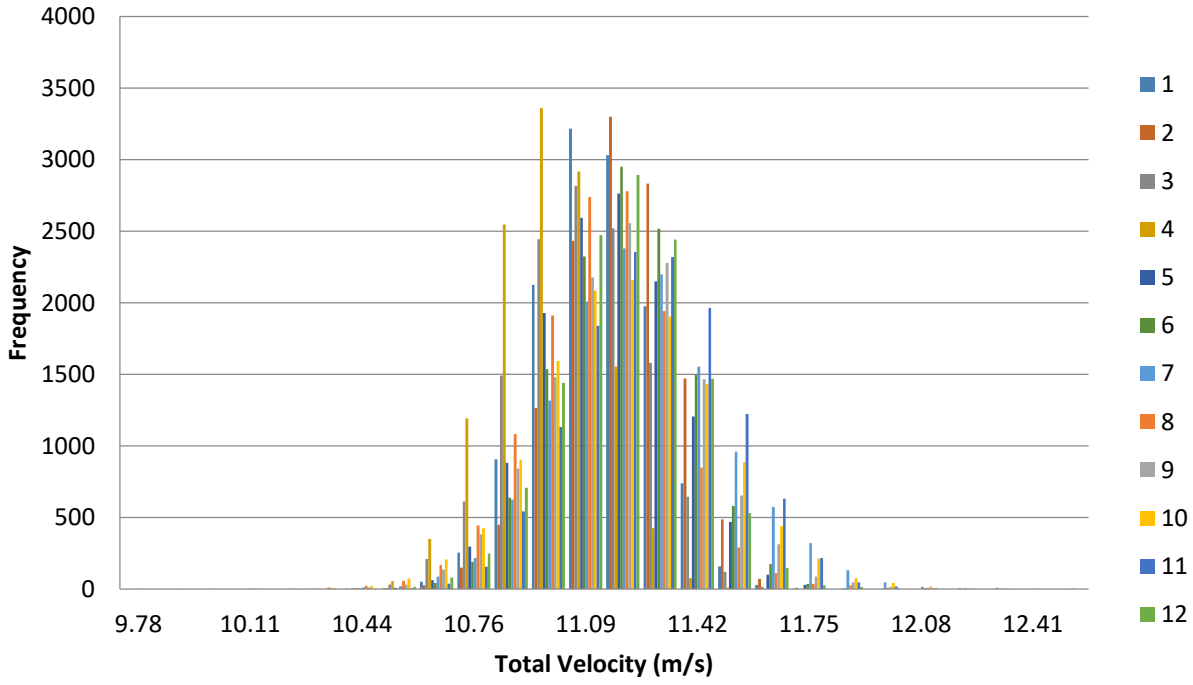
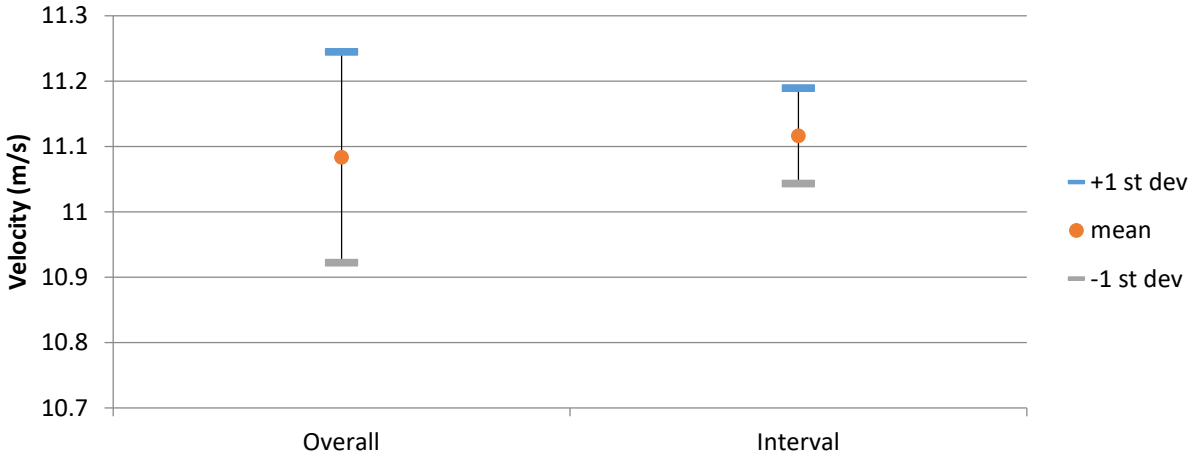
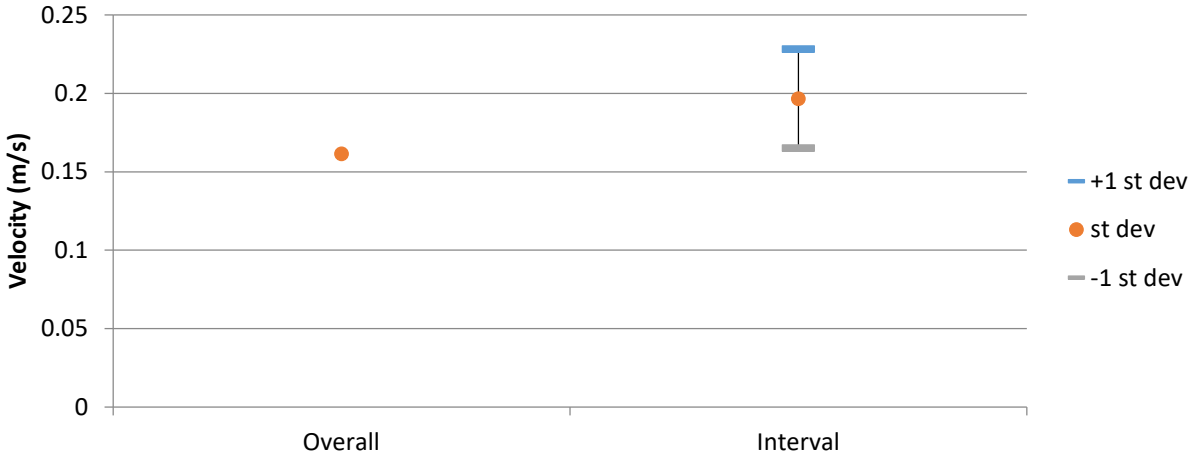


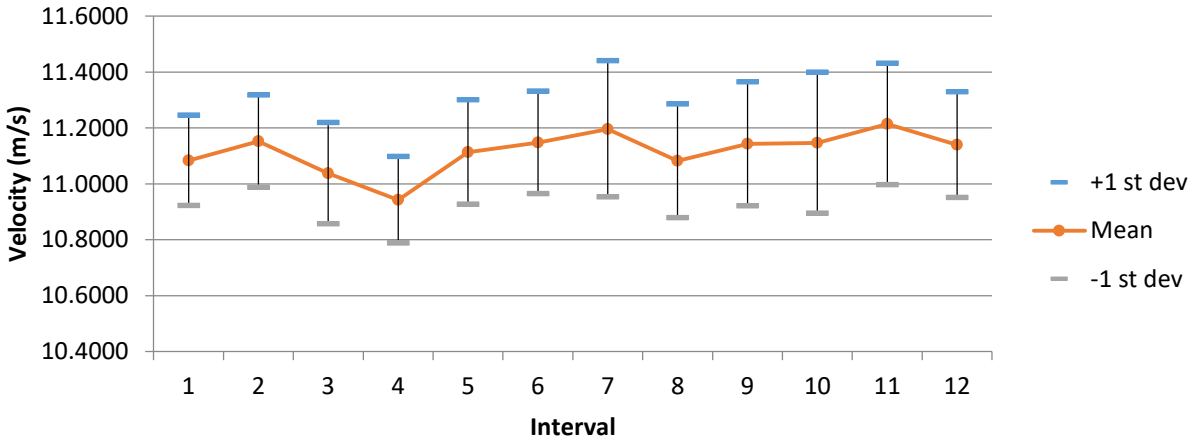
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 147
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 19-Aug-13 First Sample Time: 08:41:25.250

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.2489	11.9281	11.0286	0.1792
u	9.3000	11.5000	10.6420	0.2079
v	-1.8700	2.9900	0.2713	0.6232
w	-5.0700	-0.0759	-2.7421	0.6214

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.7252	10.2841	11.1017	0.1798	1.6194
2	11.5832	10.3653	10.9828	0.1614	1.4693
3	11.6112	10.4439	11.0329	0.1545	1.4008
4	11.5745	10.3041	11.0408	0.1644	1.4886
5	11.7186	10.3229	11.0815	0.1687	1.5222
6	11.7380	10.3439	11.0227	0.1730	1.5698
7	11.5660	10.3383	11.0138	0.1671	1.5176
8	11.9113	10.2863	11.0724	0.2044	1.8465
9	11.9281	10.2734	11.0282	0.2012	1.8246
10	11.5485	10.2801	11.0048	0.1626	1.4772
11	11.5523	10.4231	11.0197	0.1570	1.4250
12	11.6832	10.2489	10.9421	0.1892	1.7290
		Average	11.0286	0.1736	1.5742
		St Dev	0.0434	0.0167	0.1440

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.7067	0.5938	-2.7762	0.1834	0.4718	0.5758	1.7128	4.4062	5.3778
2	10.6219	-0.5095	-2.6843	0.1585	0.3140	0.4839	1.4918	2.9564	4.5560
3	10.6390	-0.1621	-2.8837	0.1613	0.2822	0.3361	1.5159	2.6522	3.1589
4	10.6730	0.2543	-2.7491	0.1629	0.4665	0.3853	1.5260	4.3704	3.6102
5	10.5942	0.0805	-3.1723	0.2268	0.5042	0.4647	2.1404	4.7589	4.3862
6	10.5644	0.4394	-3.0279	0.2263	0.5369	0.4710	2.1418	5.0820	4.4583
7	10.7089	0.3948	-2.4149	0.1972	0.4874	0.6227	1.8417	4.5512	5.8150
8	10.6222	0.7636	-2.8701	0.2134	0.6885	0.6854	2.0091	6.4819	6.4526
9	10.6350	0.7488	-2.6359	0.2804	0.5438	0.8212	2.6366	5.1132	7.7213
10	10.5980	0.5890	-2.7969	0.2077	0.5124	0.5816	1.9595	4.8348	5.4880
11	10.6494	0.3106	-2.7583	0.1756	0.4011	0.3877	1.6486	3.7668	3.6406
12	10.6910	-0.2462	-2.1366	0.2119	0.4957	0.7420	1.9820	4.6366	6.9407

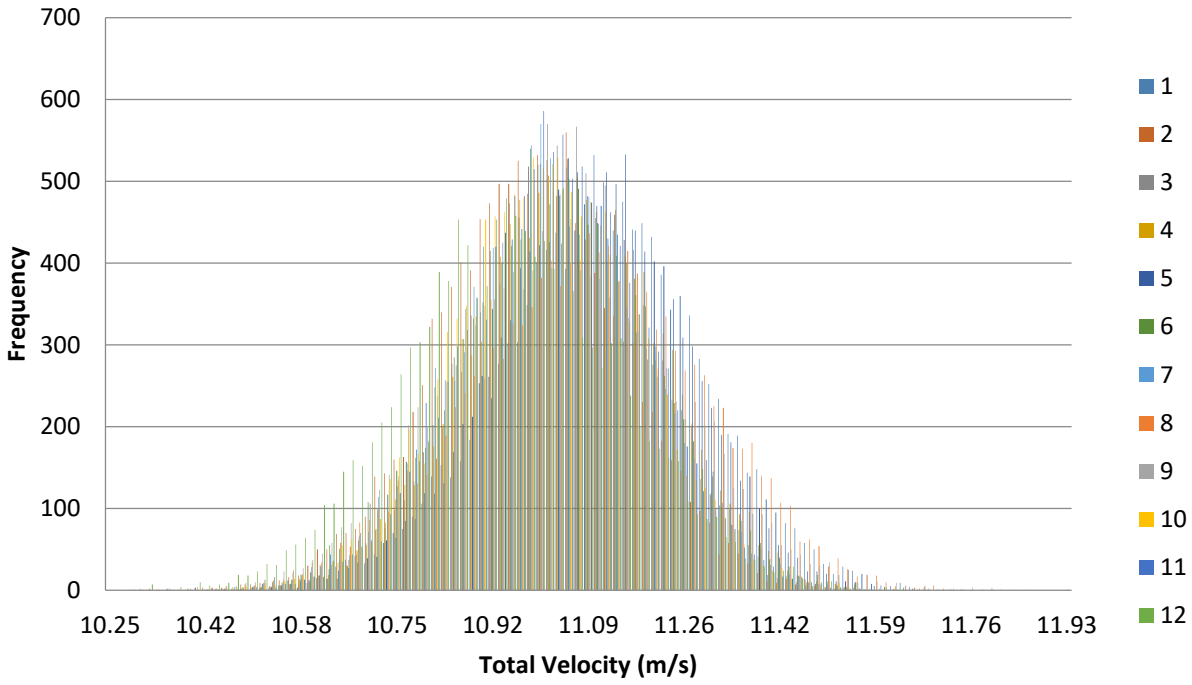


Figure 1. Velocity histogram for each interval (100 bins).

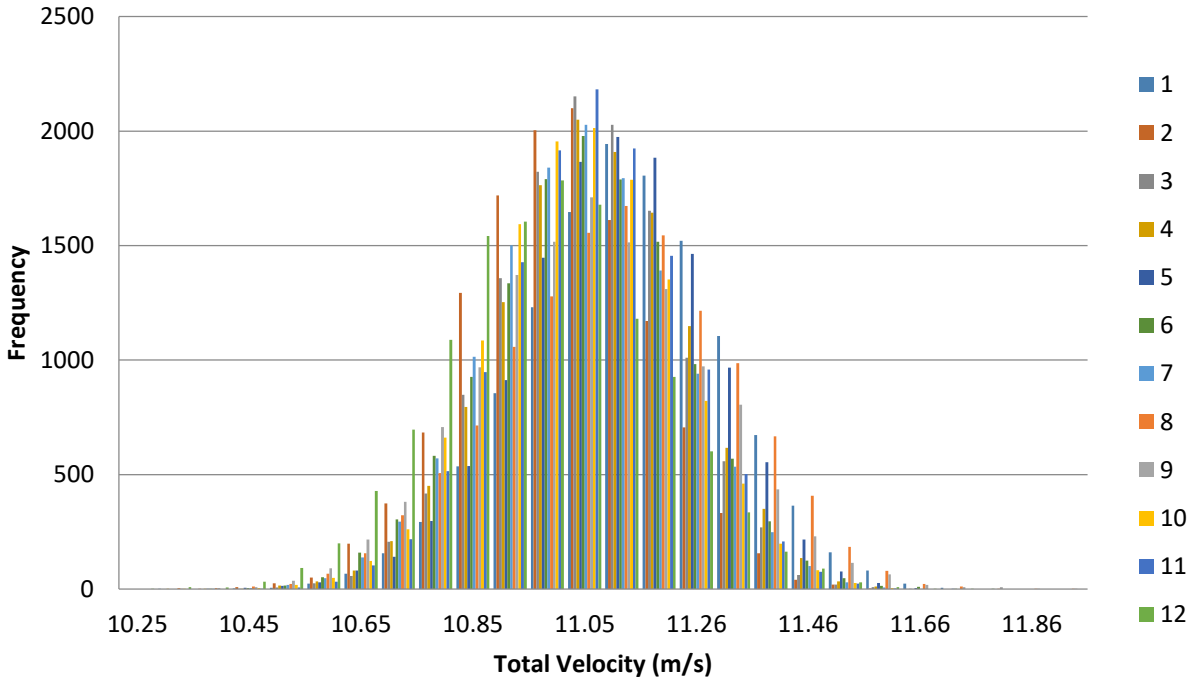
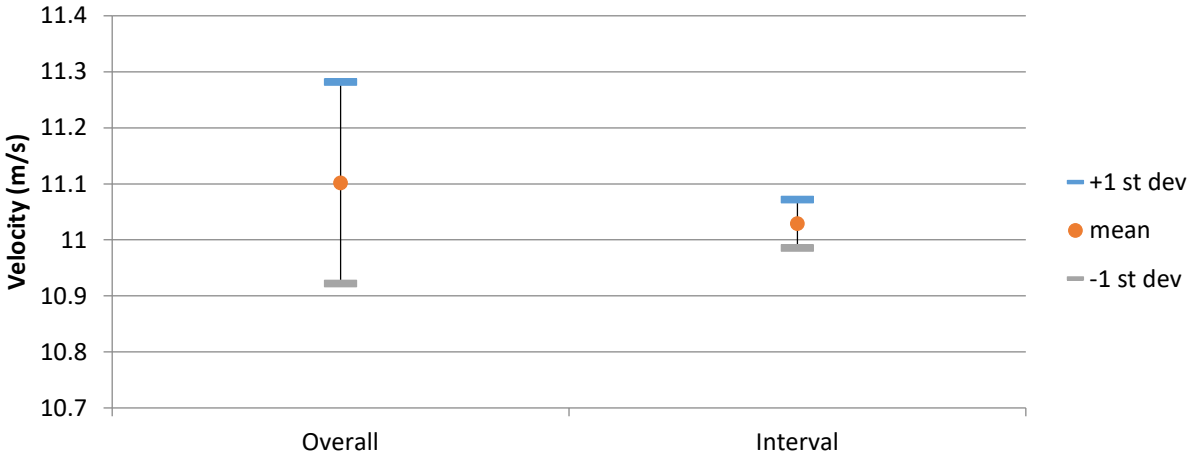
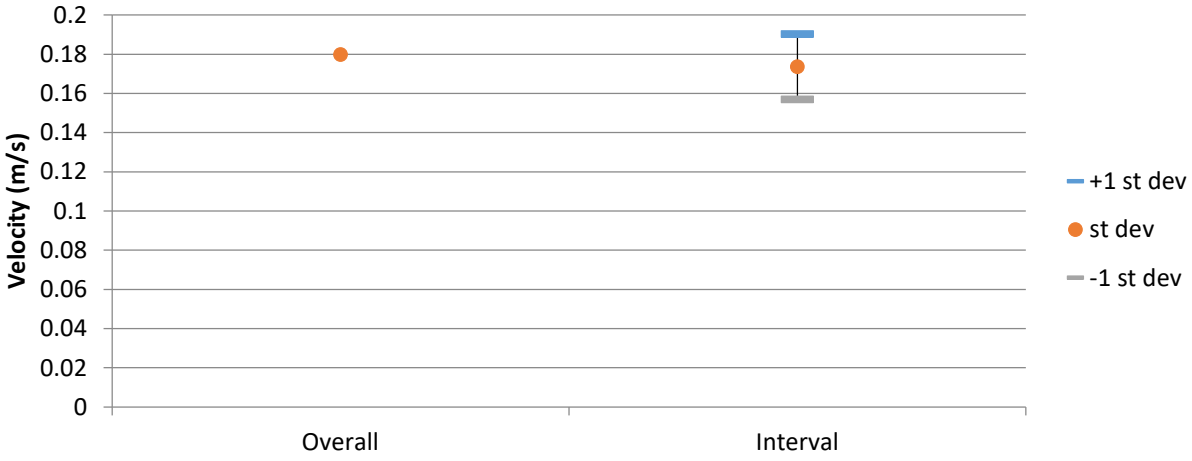


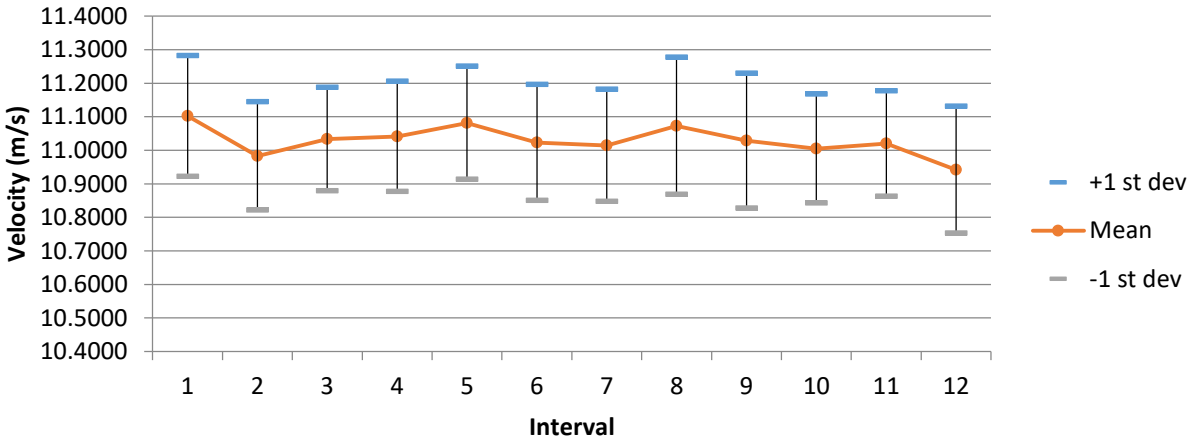
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 148
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 19-Aug-13 First Sample Time: 08:44:30.250

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.2083	11.8066	11.0377	0.1896
u	9.4700	11.6000	10.6200	0.2081
v	-1.5600	3.3100	0.6700	0.6048
w	-4.8000	-0.2140	-2.7914	0.6582

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.8066	10.2333	10.9806	0.2022	1.8417
2	11.7628	10.4243	11.0310	0.1778	1.6115
3	11.7930	10.3081	11.0384	0.1841	1.6681
4	11.7123	10.2083	11.0345	0.1773	1.6072
5	11.7743	10.2601	11.0973	0.1804	1.6260
6	11.7424	10.2294	11.0768	0.2099	1.8949
7	11.7138	10.2679	11.0227	0.1811	1.6432
8	11.6852	10.4269	11.0214	0.1760	1.5973
9	11.5992	10.3188	11.0171	0.1670	1.5162
10	11.6960	10.3518	10.9668	0.1818	1.6574
11	11.7730	10.4022	11.0818	0.1917	1.7299
12	11.7653	10.3885	11.0840	0.1923	1.7345
		Average	11.0377	0.1851	1.6773
		St Dev	0.0409	0.0120	0.1026

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.6478	0.6710	-2.3052	0.2592	0.6662	0.9824	2.4342	6.2567	9.2264
2	10.5424	0.5102	-3.1108	0.2059	0.6141	0.4654	1.9529	5.8251	4.4144
3	10.6473	0.7558	-2.6607	0.2391	0.5264	0.7277	2.2458	4.9437	6.8348
4	10.5874	0.7383	-2.9379	0.2063	0.4121	0.5569	1.9490	3.8925	5.2603
5	10.5899	1.0971	-3.0423	0.2110	0.5312	0.5006	1.9926	5.0158	4.7271
6	10.6283	1.2850	-2.7137	0.2057	0.5931	0.6063	1.9350	5.5803	5.7047
7	10.6637	0.2854	-2.6922	0.1648	0.4120	0.5404	1.5455	3.8634	5.0680
8	10.5814	0.5475	-2.9226	0.2306	0.4452	0.6665	2.1796	4.2074	6.2988
9	10.6205	0.5748	-2.8157	0.1769	0.3339	0.4568	1.6659	3.1439	4.3007
10	10.6722	0.1254	-2.3876	0.1673	0.6122	0.5377	1.5680	5.7360	5.0382
11	10.6192	0.6063	-3.0074	0.1877	0.5483	0.5720	1.7679	5.1630	5.3866
12	10.6392	0.8447	-2.9018	0.1806	0.4813	0.5498	1.6972	4.5234	5.1675

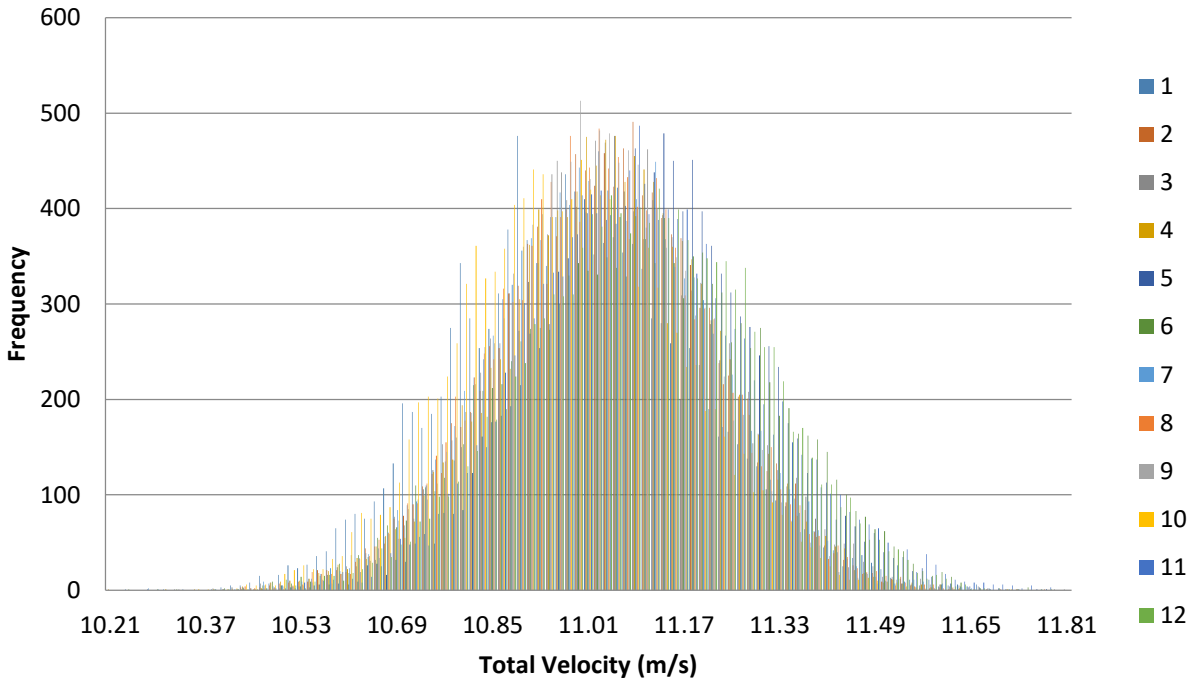


Figure 1. Velocity histogram for each interval (100 bins).

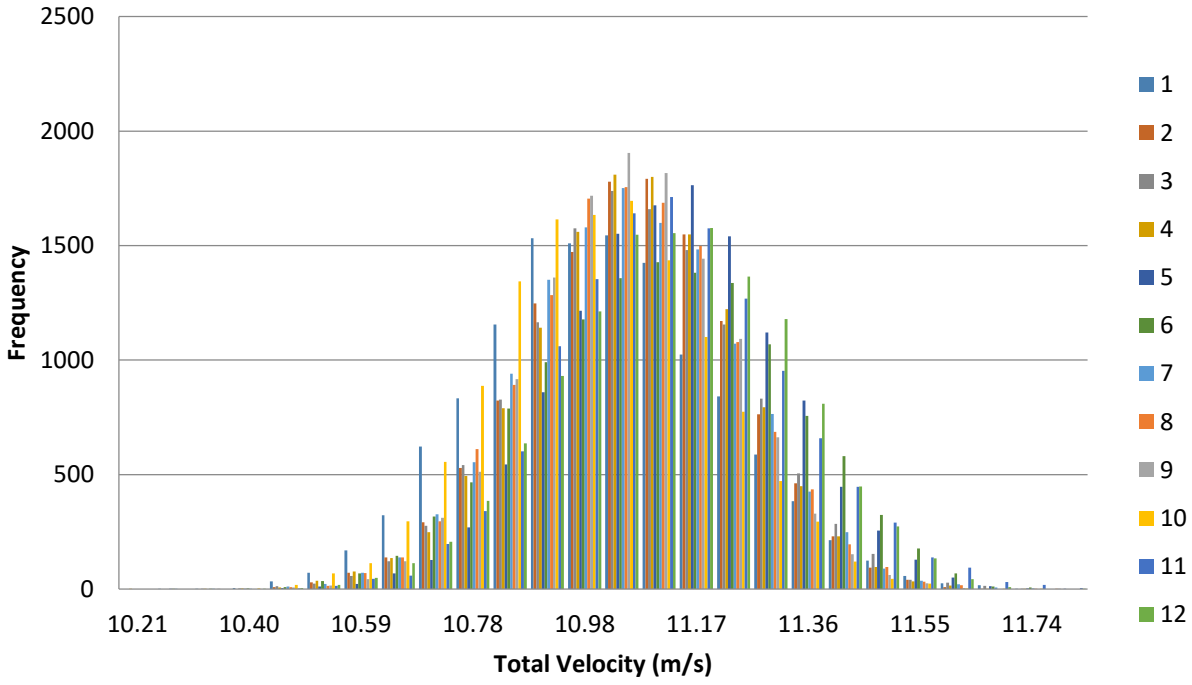
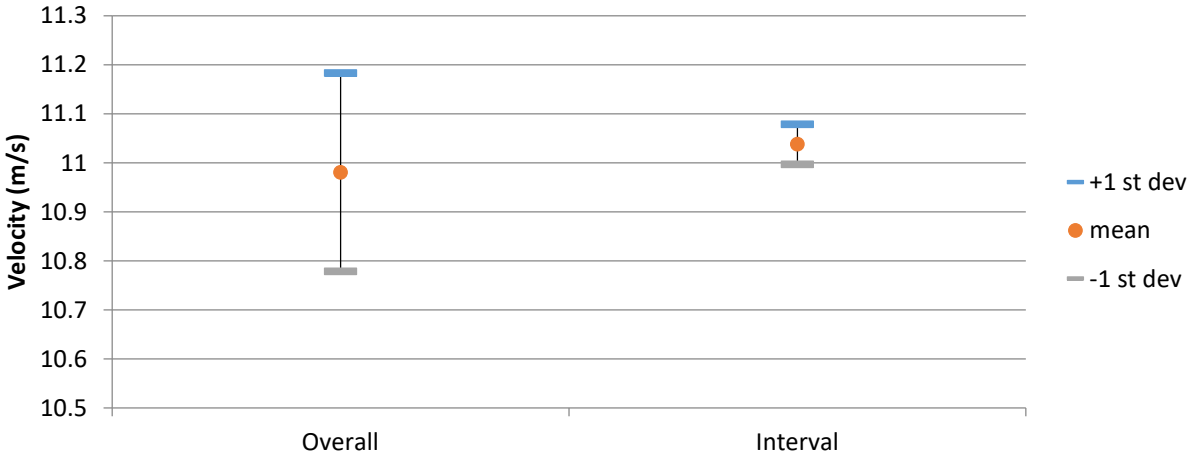
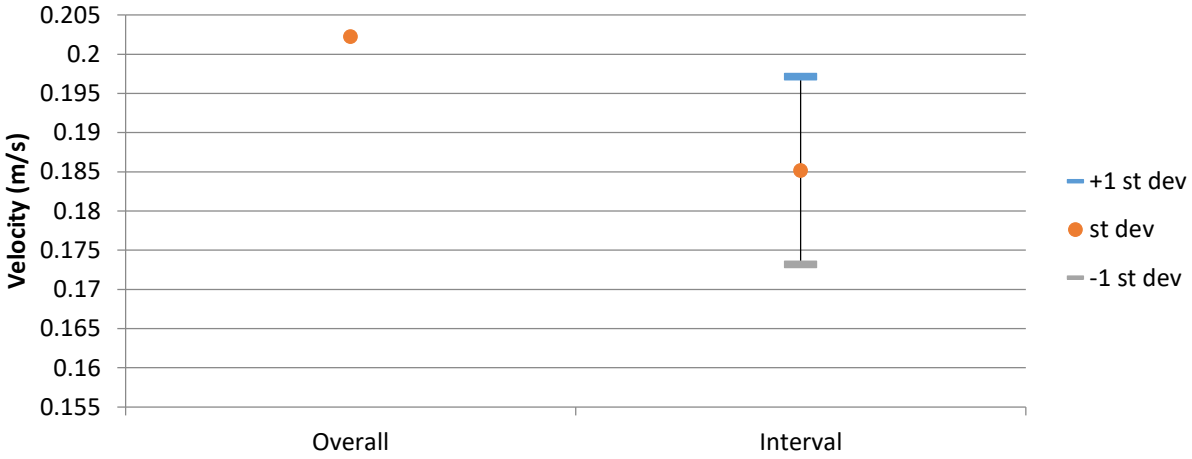


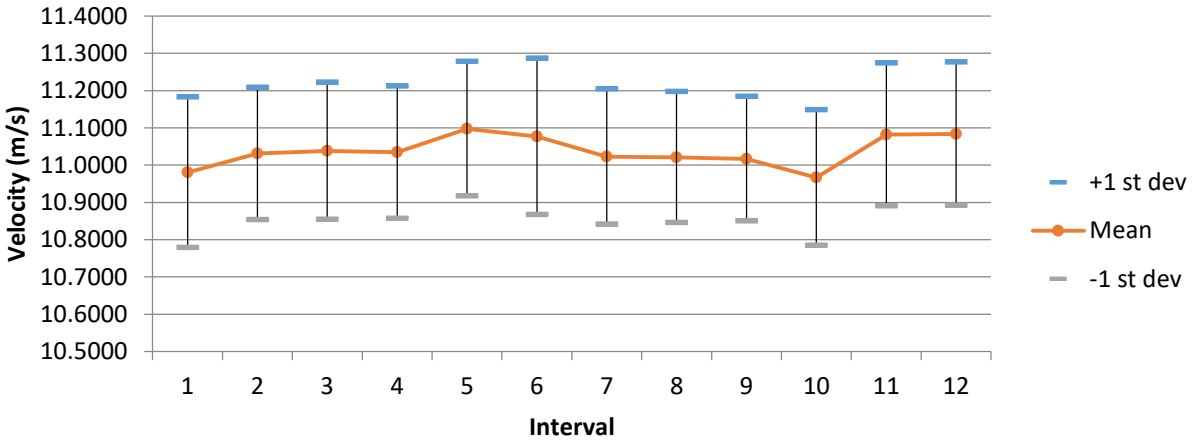
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 149
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 19-Aug-13 First Sample Time: 09:17:05.203

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.1965	12.1351	10.9097	0.1615
u	9.6700	11.6000	10.5658	0.1686
v	-1.7700	2.8400	-0.1406	0.5081
w	-4.6800	-0.9300	-2.6248	0.4637

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.4901	10.2430	10.8787	0.1481	1.3616
2	11.4958	10.3574	10.8465	0.1439	1.3268
3	11.4302	10.3713	10.8838	0.1369	1.2577
4	11.5318	10.3034	10.9191	0.1414	1.2954
5	11.4476	10.3660	10.9177	0.1477	1.3525
6	11.5951	10.1965	10.8881	0.1617	1.4849
7	11.4231	10.1979	10.8628	0.1538	1.4162
8	11.5229	10.4004	10.9490	0.1498	1.3682
9	11.4500	10.1982	10.8259	0.1599	1.4766
10	11.4799	10.3754	10.9422	0.1510	1.3801
11	11.5411	10.4343	10.9842	0.1510	1.3750
12	12.1351	10.3973	11.0177	0.1761	1.5982
		Average	10.9096	0.1518	1.3911
		St Dev	0.0566	0.0104	0.0885

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.6004	-0.2979	-2.4005	0.1464	0.2348	0.2700	1.3814	2.2150	2.5466
2	10.5249	-0.5763	-2.5430	0.1508	0.1874	0.1919	1.4330	1.7806	1.8231
3	10.5320	-0.3963	-2.7101	0.1435	0.1360	0.1064	1.3626	1.2909	1.0107
4	10.5410	-0.4117	-2.8085	0.1475	0.1599	0.1726	1.3994	1.5173	1.6374
5	10.5802	-0.1999	-2.6655	0.1468	0.1545	0.2959	1.3872	1.4607	2.7968
6	10.5685	-0.2701	-2.5584	0.1572	0.2704	0.4083	1.4874	2.5588	3.8633
7	10.5699	-0.0517	-2.4600	0.1563	0.3585	0.3043	1.4784	3.3920	2.8791
8	10.4939	-0.3554	-3.0659	0.1636	0.3622	0.3114	1.5591	3.4519	2.9676
9	10.6297	-0.5160	-1.8973	0.1796	0.3452	0.4660	1.6898	3.2476	4.3836
10	10.6412	0.0145	-2.4967	0.1660	0.2576	0.4359	1.5596	2.4210	4.0965
11	10.5398	0.6372	-2.9825	0.1732	0.3712	0.3454	1.6434	3.5217	3.2773
12	10.5681	0.7363	-2.9075	0.2166	0.5622	0.6144	2.0497	5.3200	5.8136

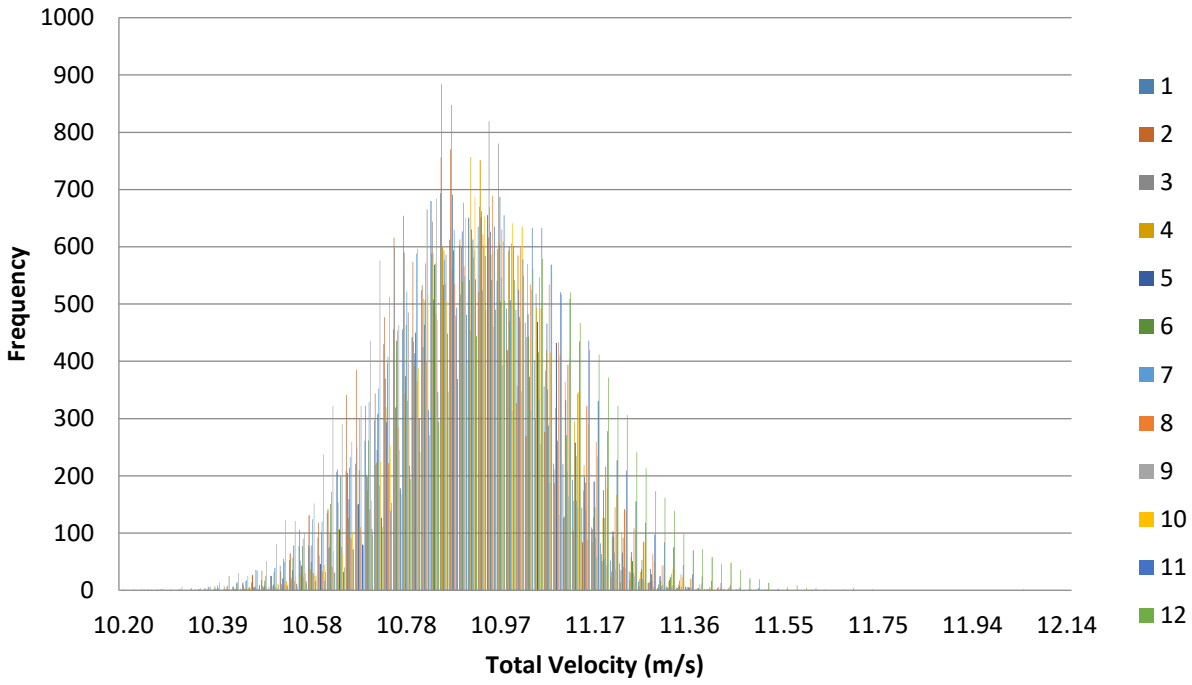


Figure 1. Velocity histogram for each interval (100 bins).

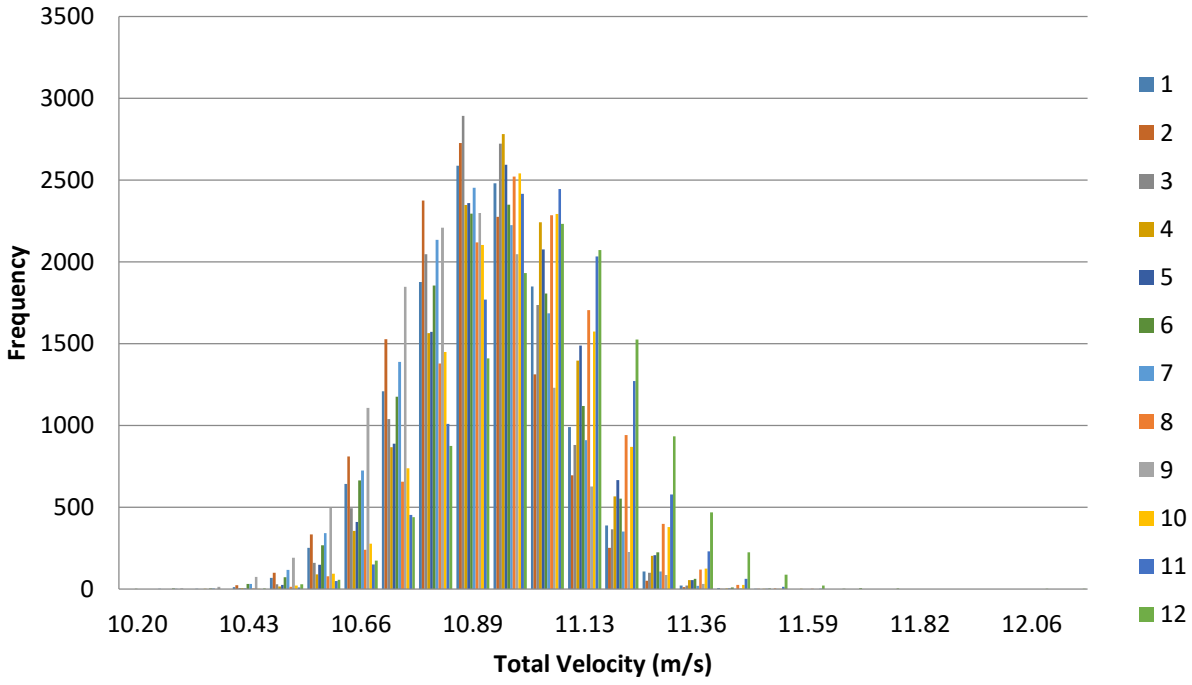
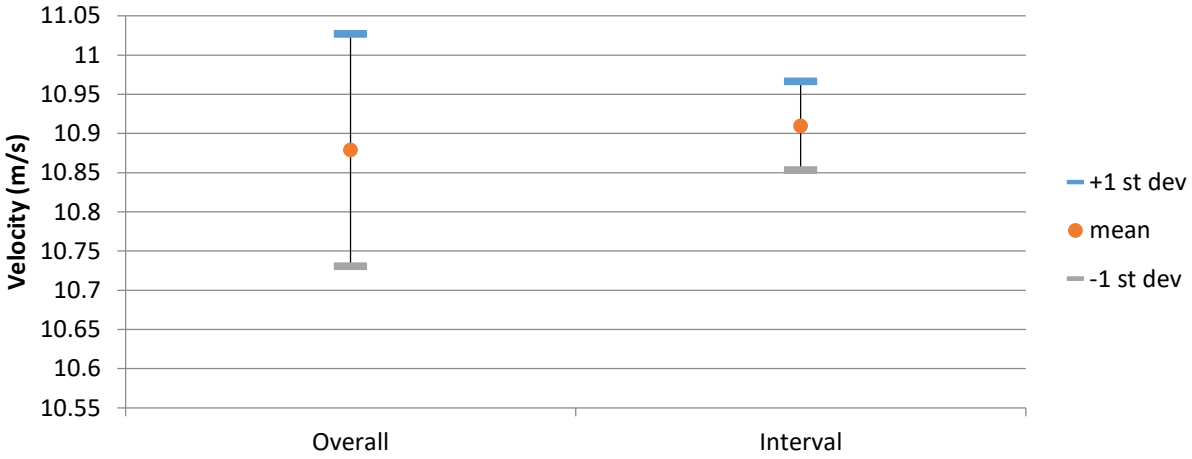
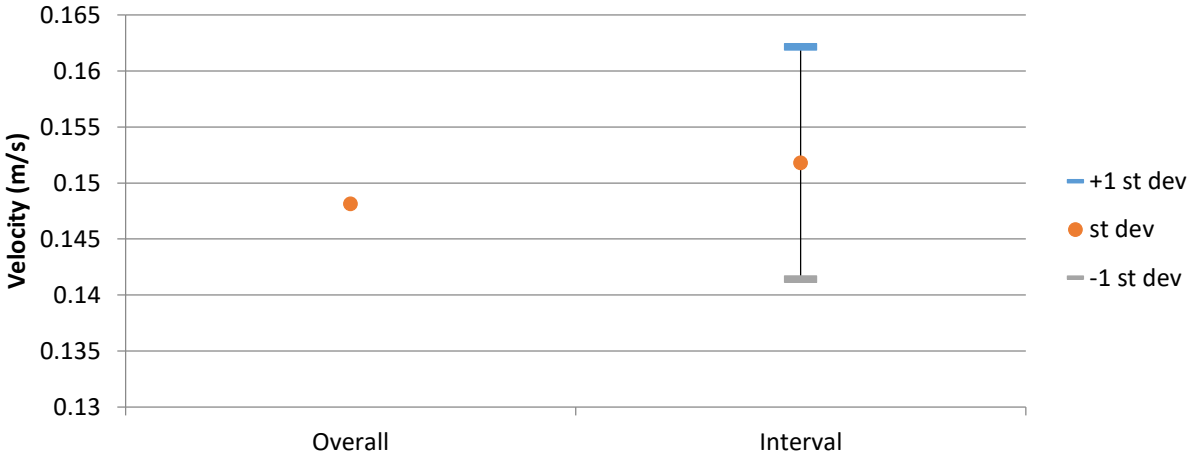


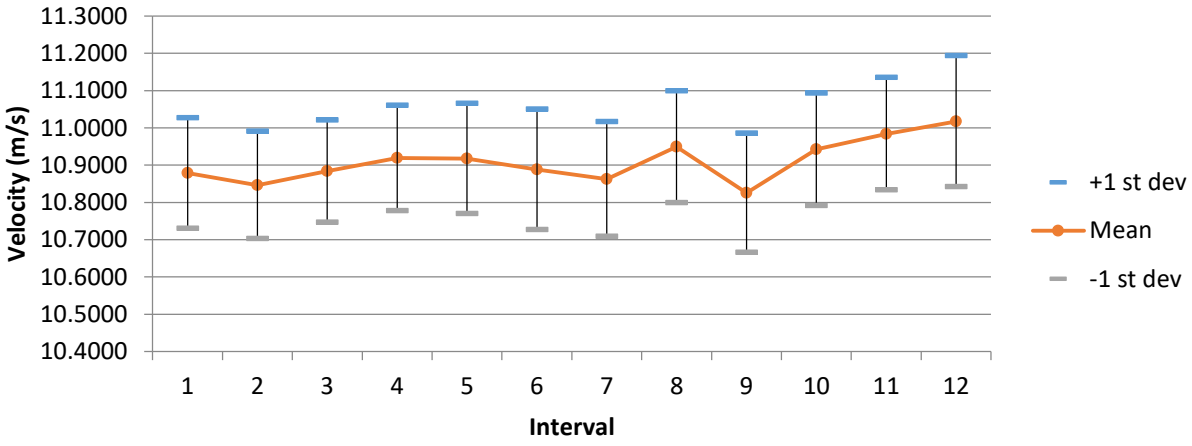
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 150
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E2
First Sample Date: 19-Aug-13 First Sample Time: 09:19:44.515

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.0779	15.4286	12.0947	0.3702
u	7.9000	13.2000	10.8808	0.6234
v	-6.7800	5.1000	-0.1187	1.0306
w	-11.0000	-0.5950	-5.0935	0.7860

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)	# Zero Values	% Zero Values
1	13.6548	10.9408	12.0310	0.3785	3.1462	0	0.00 %
2	13.6126	11.1281	12.1050	0.3444	2.8447	0	0.00 %
3	13.3095	11.0948	12.2947	0.2863	2.3284	0	0.00 %
4	13.2072	11.3248	12.1455	0.2865	2.3588	0	0.00 %
5	13.2189	11.1939	12.0062	0.3456	2.8782	0	0.00 %
6	13.1671	11.2788	12.1037	0.3509	2.8989	0	0.00 %
7	14.1177	10.9095	12.1578	0.4079	3.3550	4	0.03 %
8	13.3106	10.8072	11.8563	0.2605	2.1972	0	0.00 %
9	13.6756	11.1976	12.0240	0.3412	2.8376	0	0.00 %
10	13.2187	11.1007	11.9840	0.3504	2.9235	0	0.00 %
11	13.2495	11.1780	12.0976	0.3572	2.9527	0	0.00 %
12	15.4286	10.0779	12.3302	0.4322	3.5048	1	0.01 %
		Average	12.0947	0.3451	2.7768		
		St Dev	0.1252	0.047358	0.3518		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.7274	-0.1407	-5.3670	0.5040	0.7243	0.4568	4.6981	6.7518	4.2581
2	11.1215	0.4272	-4.5248	0.7076	0.7076	1.1422	6.3625	6.3628	10.2705
3	11.4731	-0.1904	-4.2964	0.3620	0.4589	0.8792	3.1552	3.9995	7.6635
4	10.7271	-1.9651	-5.1546	0.6470	0.9617	0.8655	6.0313	8.9653	8.0683
5	10.6614	-0.3061	-5.3597	0.5103	1.1629	0.4120	4.7868	10.9074	3.8644
6	10.9937	-0.3403	-4.9647	0.4474	0.8177	0.3605	4.0694	7.4381	3.2790
7	10.7941	-0.0513	-5.2803	0.9270	1.2020	1.1300	8.5879	11.1352	10.4684
8	10.4583	0.3170	-5.4792	0.4902	0.6619	0.6807	4.6876	6.3289	6.5091
9	10.9020	0.6126	-4.9541	0.4454	0.7080	0.4705	4.0854	6.4938	4.3159
10	10.7939	0.4752	-5.1595	0.4148	0.3651	0.2784	3.8425	3.3824	2.5795
11	10.8716	0.1689	-5.2679	0.4467	0.4243	0.3609	4.1089	3.9025	3.3196
12	11.0448	-0.4294	-5.3149	0.7018	0.8994	0.7061	6.3538	8.1434	6.3934

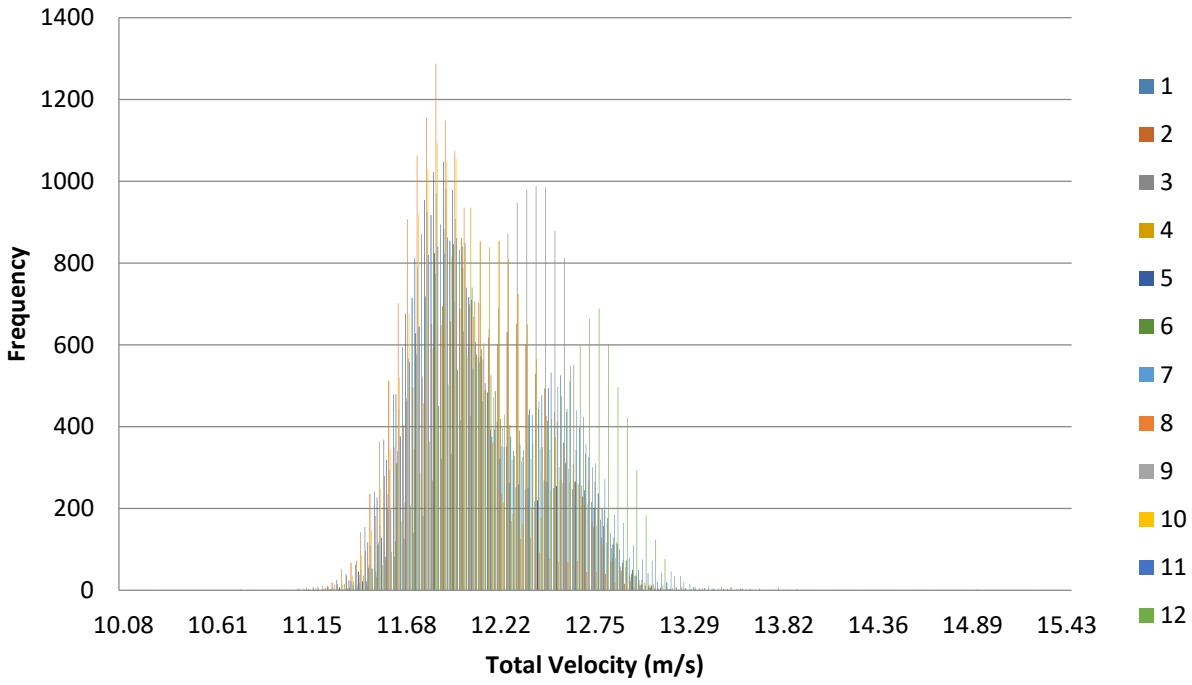


Figure 1. Velocity histogram for each interval (100 bins).

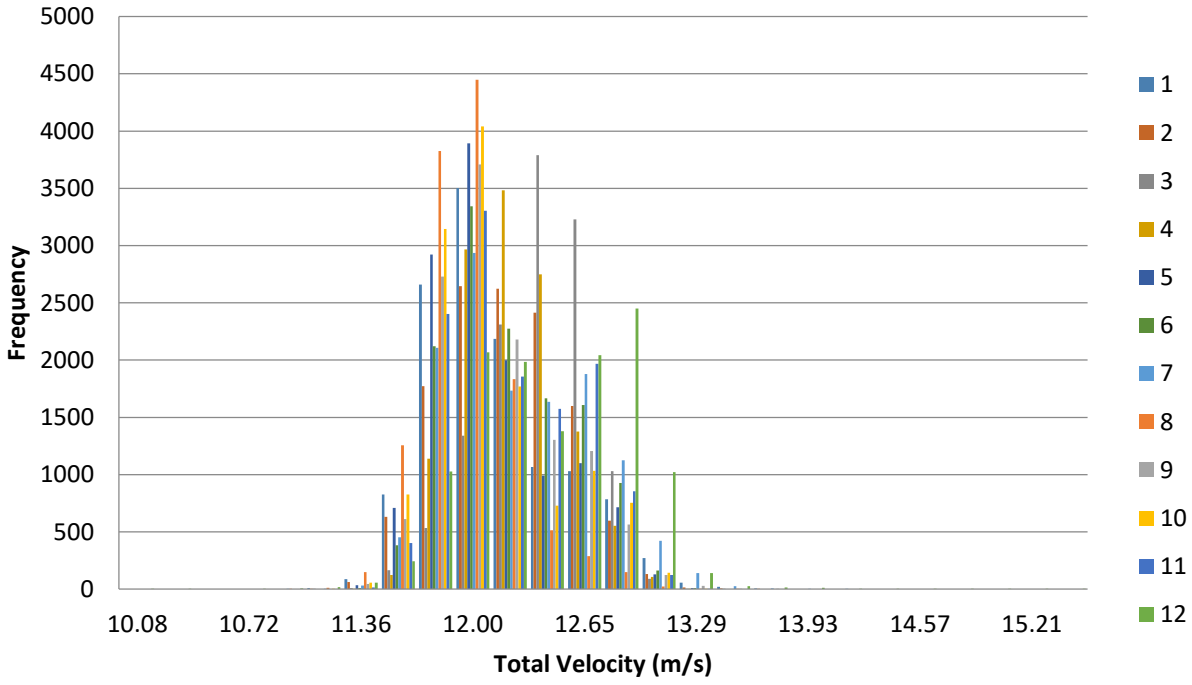
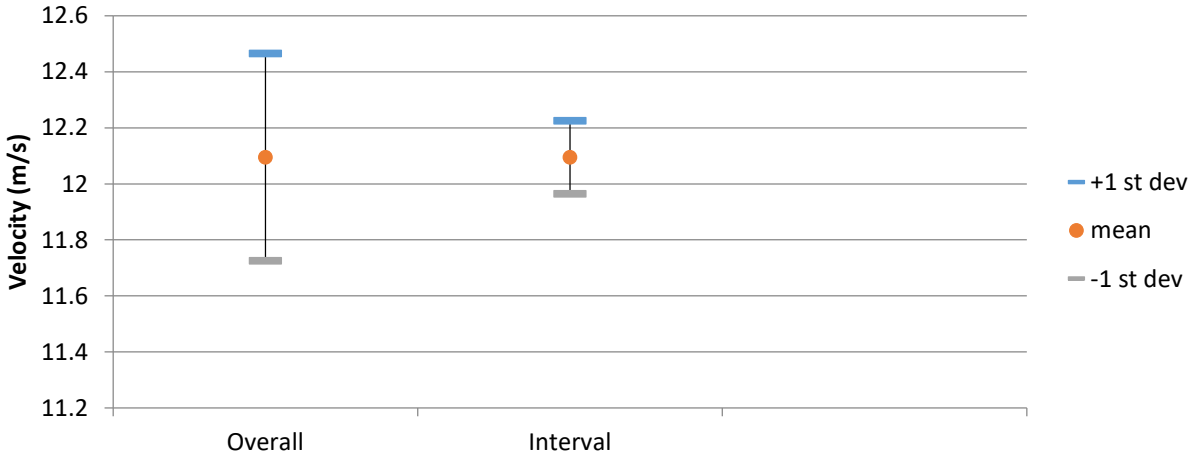
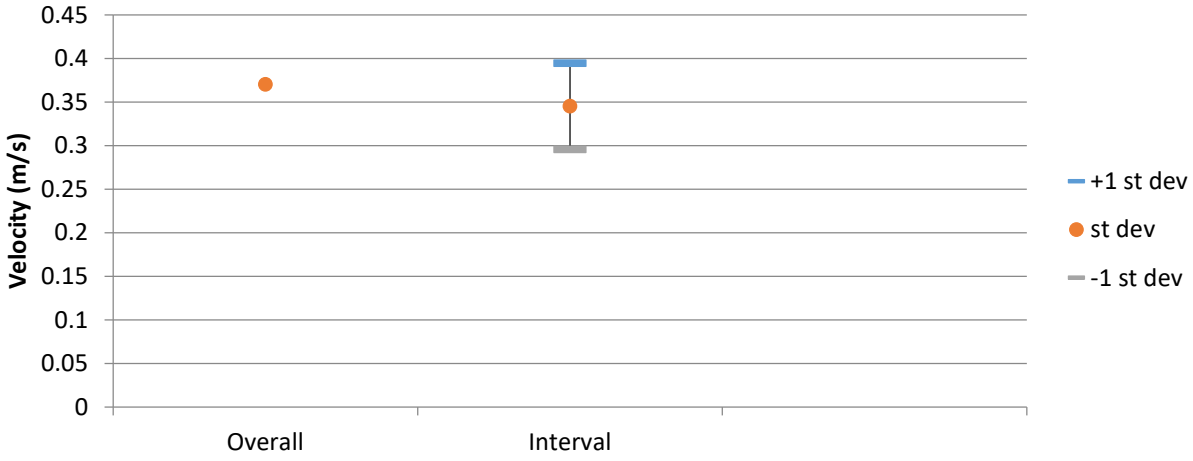


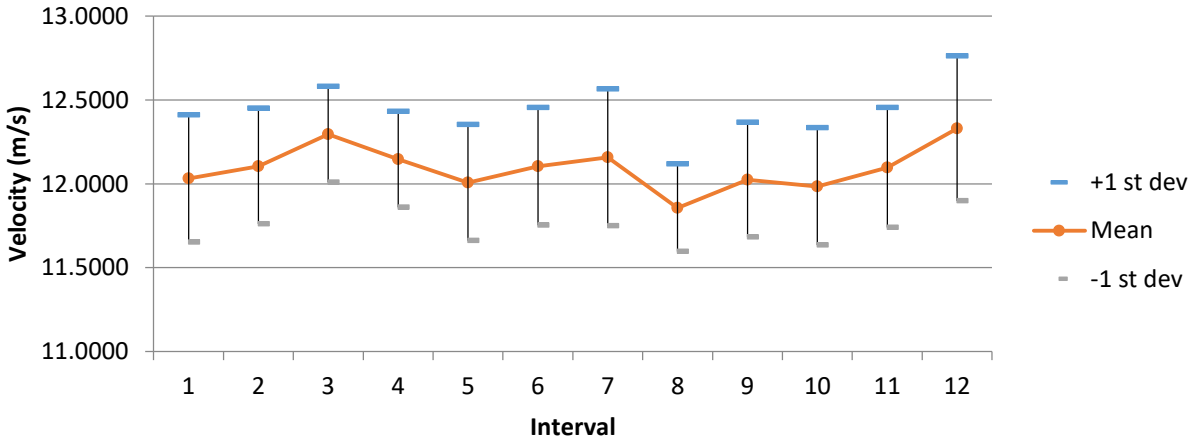
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 151
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E4
First Sample Date: 19-Aug-13 First Sample Time: 09:22:11.796

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	8.7564	11.7522	10.4956	0.3229
u	8.6100	11.6000	10.2961	0.3275
v	-1.9700	4.0000	0.8338	0.8702
w	-4.8600	1.0500	-1.4877	0.6924

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.5978	9.7589	10.6727	0.2600	2.4361
2	11.4971	9.3679	10.5222	0.2864	2.7218
3	11.5256	9.2635	10.5011	0.3281	3.1243
4	11.5506	9.4859	10.4893	0.3105	2.9602
5	11.2459	9.3074	10.3373	0.2971	2.8739
6	11.2502	9.3596	10.3465	0.2882	2.7854
7	11.5129	9.4509	10.4618	0.2872	2.7452
8	11.6863	9.4548	10.5796	0.3284	3.1041
9	11.7522	9.5211	10.5347	0.3171	3.0099
10	11.4891	9.2205	10.4379	0.3060	2.9316
11	11.6097	8.7564	10.6677	0.3214	3.0124
12	11.6101	9.2727	10.3962	0.3263	3.1390
		Average	10.4956	0.3047	2.9037
		St Dev	0.1095	0.0213	0.1964

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.3488	1.5939	-1.8998	0.2970	0.5226	0.6047	2.8703	5.0503	5.8436
2	10.2125	1.1932	-2.0520	0.2998	0.7118	0.5223	2.9361	6.9696	5.1138
3	10.3478	1.0439	-0.9411	0.3275	0.7114	0.8448	3.1654	6.8747	8.1636
4	10.2361	0.9691	-1.7596	0.3391	0.6435	0.8832	3.3125	6.2864	8.6282
5	10.2327	0.1380	-1.3133	0.3067	0.4093	0.4857	2.9972	3.9996	4.7469
6	10.2569	0.2962	-0.9668	0.3055	0.7423	0.5129	2.9782	7.2368	5.0006
7	10.2413	1.0026	-1.6892	0.3120	0.6441	0.5261	3.0467	6.2892	5.1367
8	10.2839	1.5715	-1.6753	0.3174	0.7784	0.5425	3.0867	7.5696	5.2749
9	10.3280	0.9787	-1.7083	0.3099	0.4869	0.4504	3.0003	4.7141	4.3608
10	10.3086	0.6709	-1.2751	0.3192	0.5148	0.5781	3.0965	4.9940	5.6081
11	10.5060	1.2144	-1.1278	0.3299	0.5632	0.5963	3.1398	5.3604	5.6759
12	10.2505	-0.6651	-1.4426	0.3499	0.5236	0.4415	3.4137	5.1082	4.3072

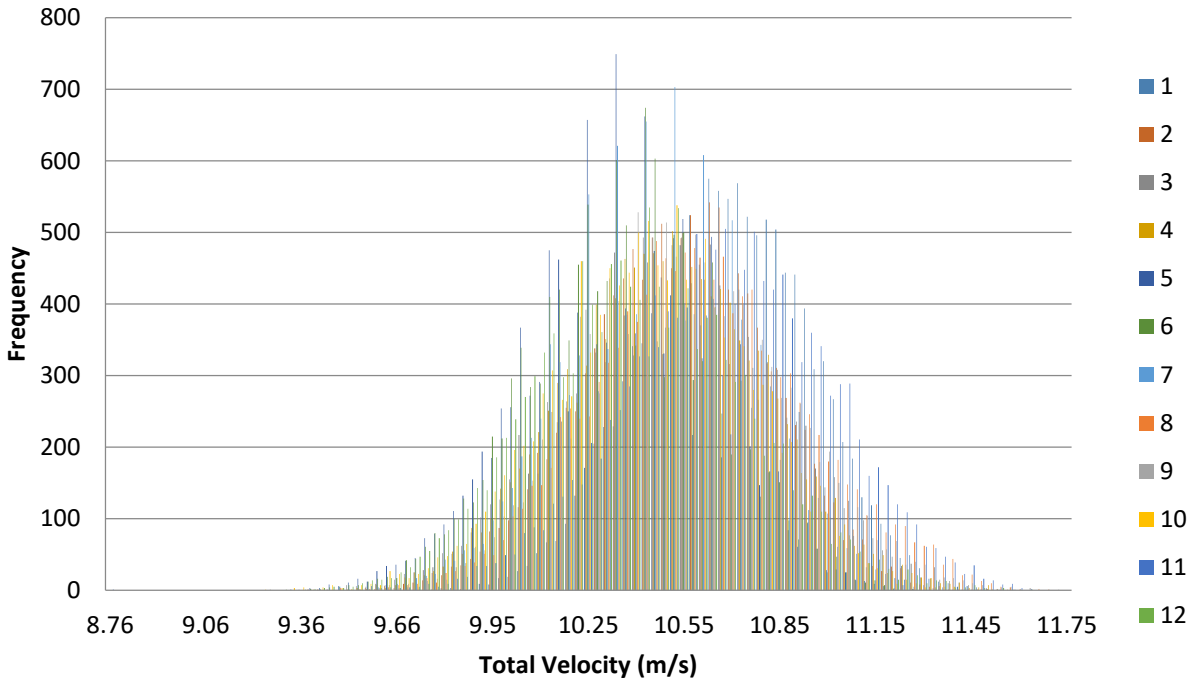


Figure 1. Velocity histogram for each interval (100 bins).

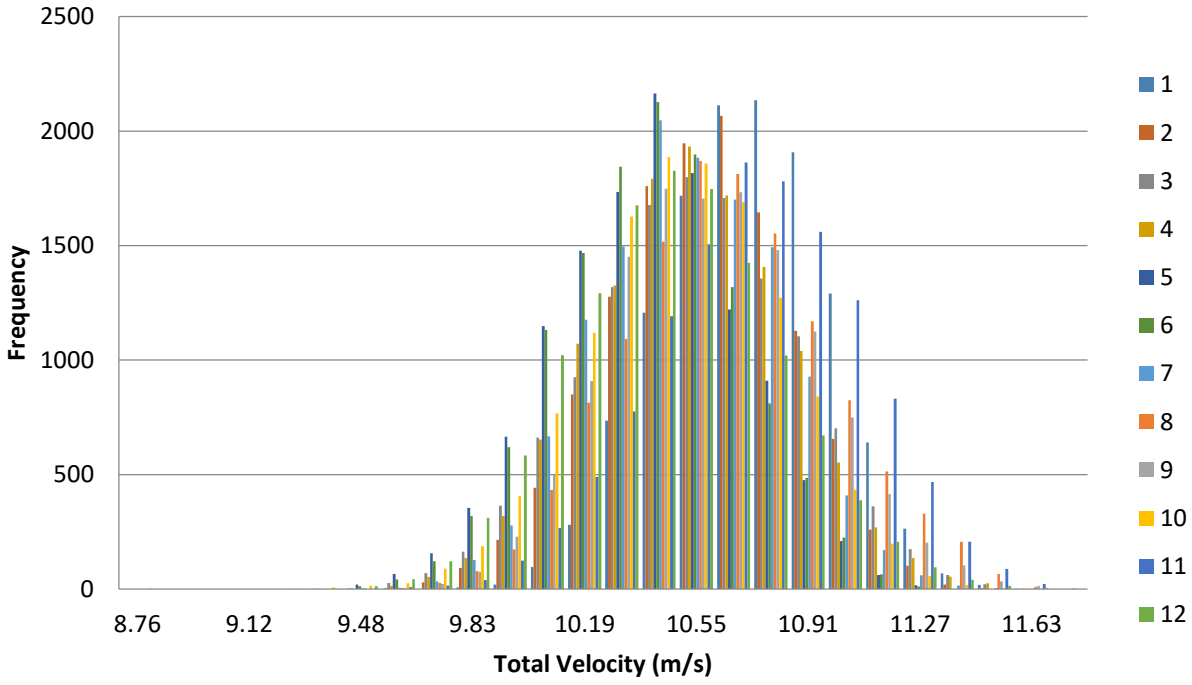
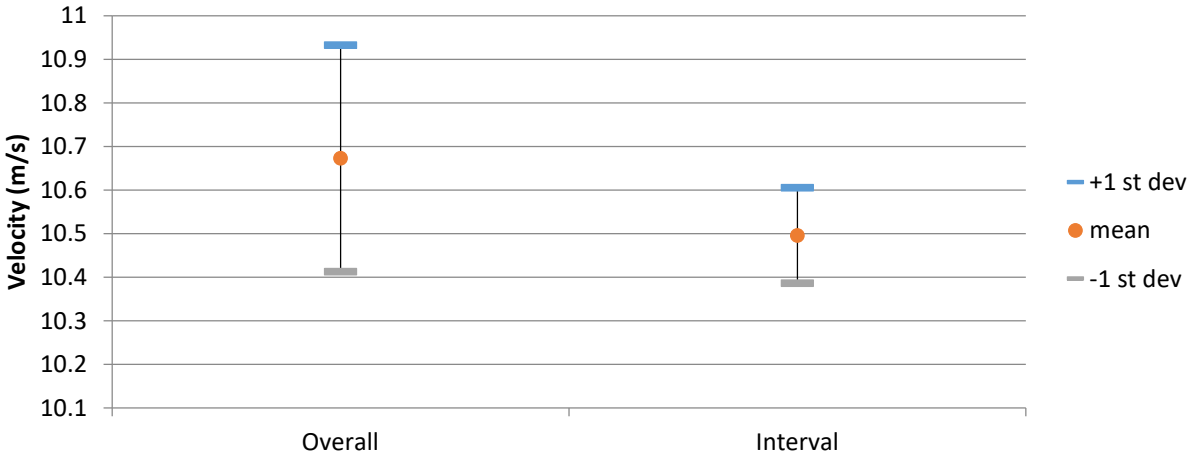
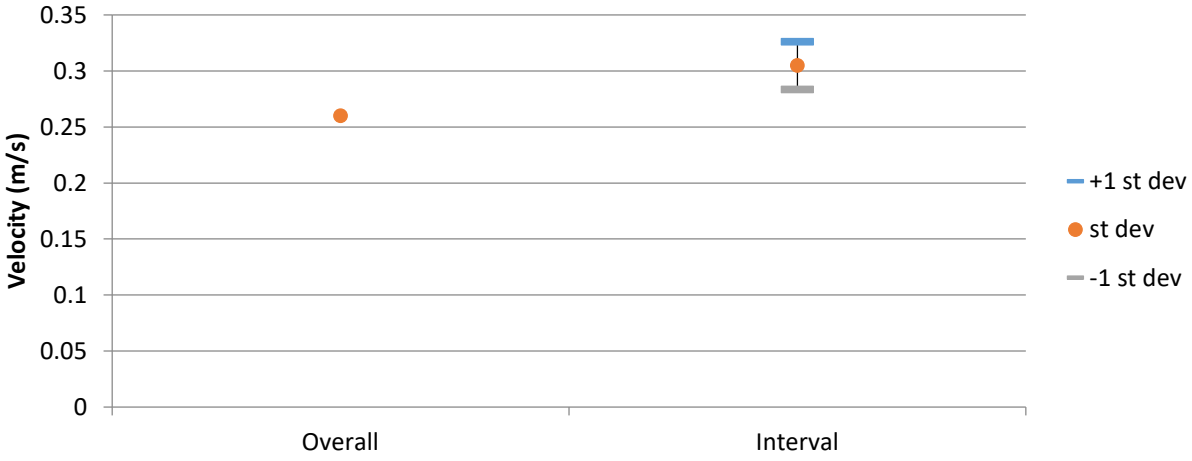


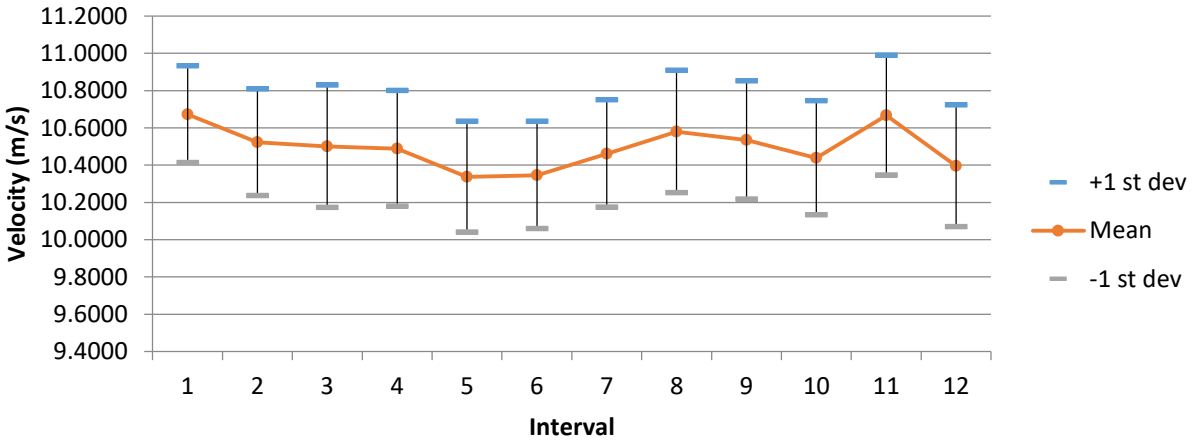
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 152
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E5
First Sample Date: 19-Aug-13 First Sample Time: 09:24:48.406

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	9.2847	11.2429	10.2000	0.2188
u	9.1100	11.2000	10.1327	0.2240
v	-3.4200	2.2800	-0.1100	0.7331
w	-3.2900	0.8530	-0.8341	0.3489

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	10.9554	9.4691	10.1831	0.2150	2.1115
2	10.9565	9.3330	10.1542	0.2154	2.1213
3	11.0422	9.2928	10.1771	0.2111	2.0745
4	11.2429	9.2847	10.2492	0.2137	2.0848
5	11.0237	9.4620	10.2591	0.2054	2.0017
6	11.1337	9.5300	10.2834	0.2105	2.0473
7	11.0374	9.4506	10.2777	0.2073	2.0167
8	11.0563	9.4388	10.2057	0.2044	2.0026
9	10.8443	9.3327	10.1400	0.2035	2.0069
10	10.8984	9.3120	10.0973	0.2112	2.0919
11	11.2143	9.3293	10.2000	0.2330	2.2845
12	11.0257	9.4300	10.1737	0.2080	2.0446
		Average	10.2000	0.2115	2.0740
		St Dev	0.0578	0.0079	0.0753

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.1043	-0.0762	-1.0156	0.2223	0.5359	0.5198	2.2002	5.3035	5.1447
2	10.1012	0.0053	-0.7935	0.2164	0.5218	0.4126	2.1424	5.1653	4.0844
3	10.1249	0.0662	-0.8317	0.2129	0.5067	0.3266	2.1028	5.0045	3.2253
4	10.1678	0.6352	-0.9389	0.2261	0.4787	0.3762	2.2241	4.7078	3.6999
5	10.1816	0.5927	-1.0146	0.2160	0.3259	0.3063	2.1211	3.2007	3.0084
6	10.2286	0.6183	-0.7950	0.2187	0.2797	0.1667	2.1386	2.7348	1.6301
7	10.2354	0.2314	-0.8290	0.2105	0.2721	0.2301	2.0569	2.6588	2.2480
8	10.1655	-0.3009	-0.8193	0.2036	0.2070	0.1257	2.0031	2.0363	1.2367
9	10.0788	-0.8354	-0.5984	0.2003	0.3379	0.2594	1.9871	3.3525	2.5734
10	10.0041	-1.1065	-0.6722	0.2051	0.4034	0.1919	2.0505	4.0328	1.9182
11	10.0990	-0.7913	-0.8265	0.2325	0.7195	0.4729	2.3026	7.1248	4.6831
12	10.1012	-0.3608	-0.8750	0.2120	0.6936	0.3012	2.0984	6.8664	2.9814

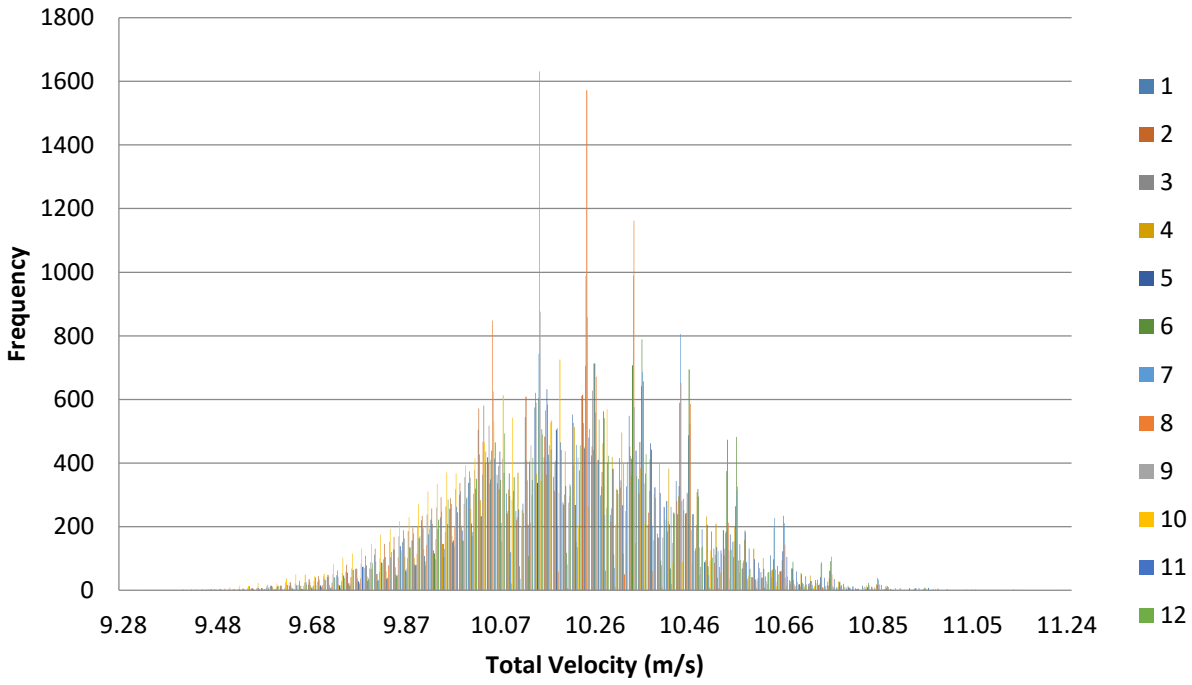


Figure 1. Velocity histogram for each interval (100 bins).

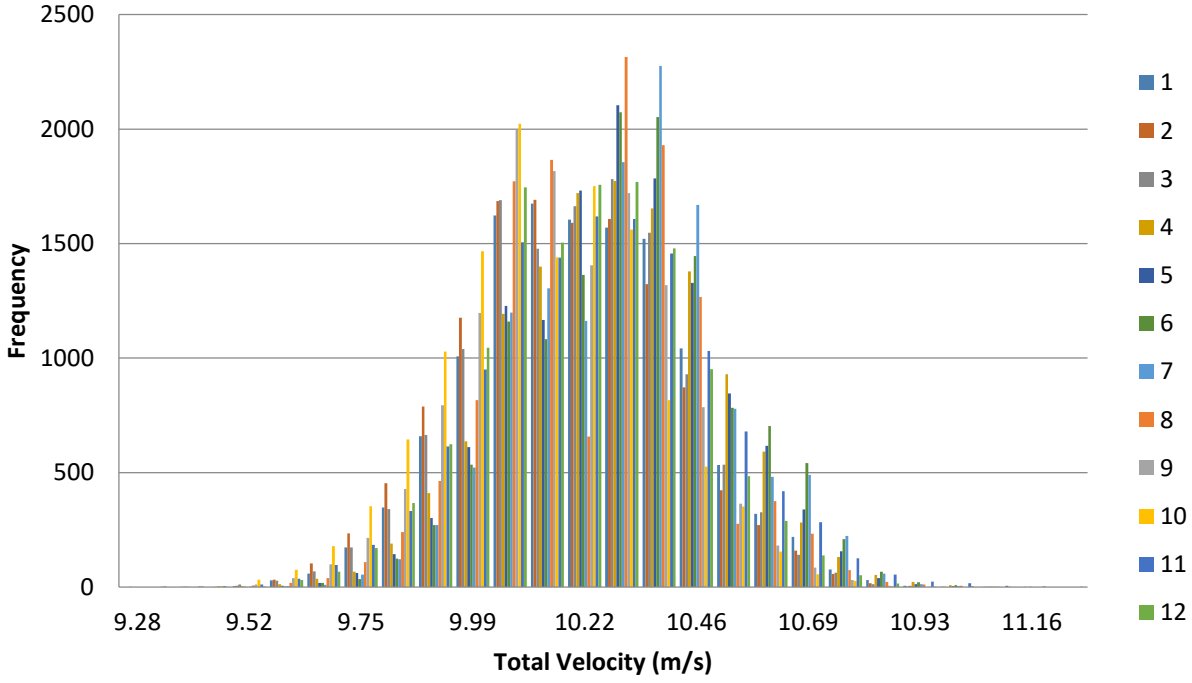
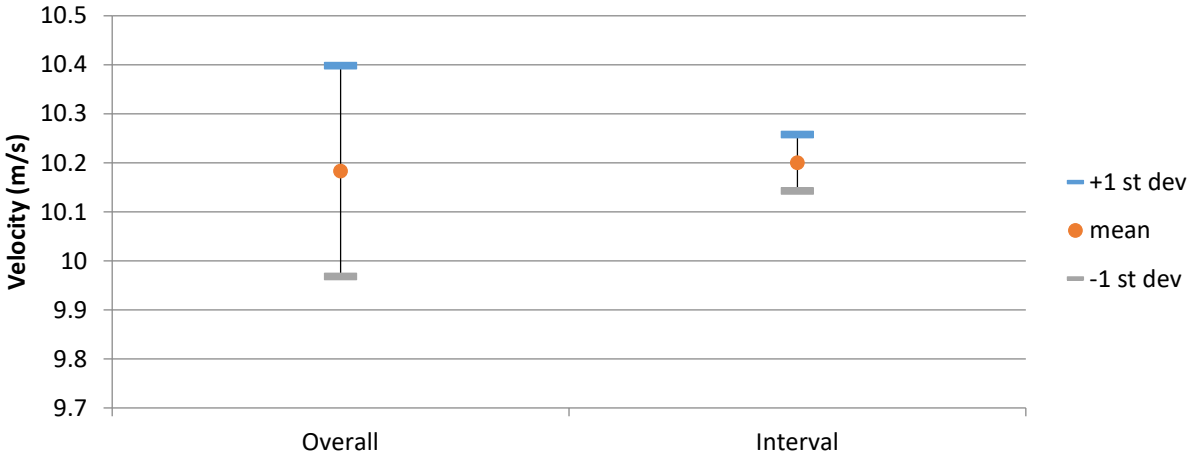
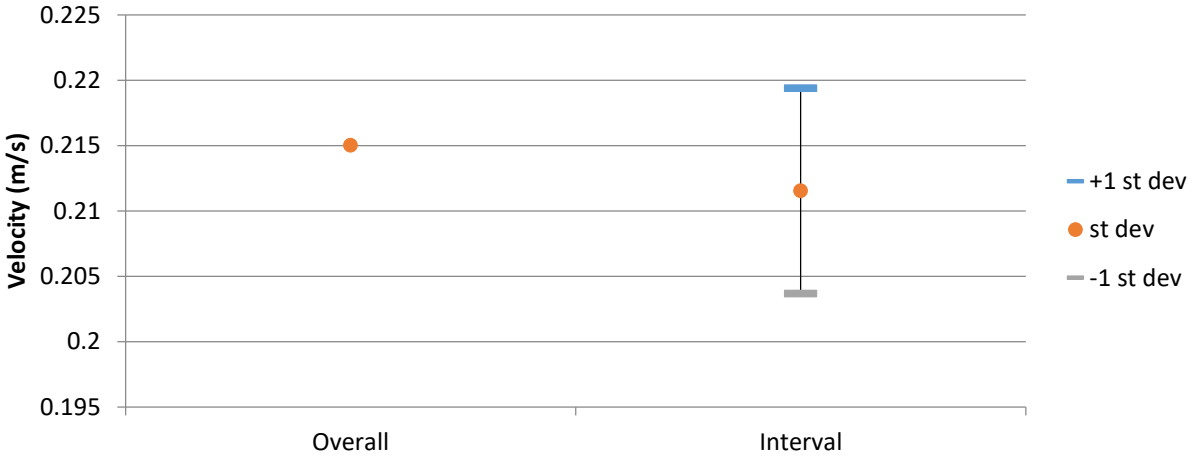


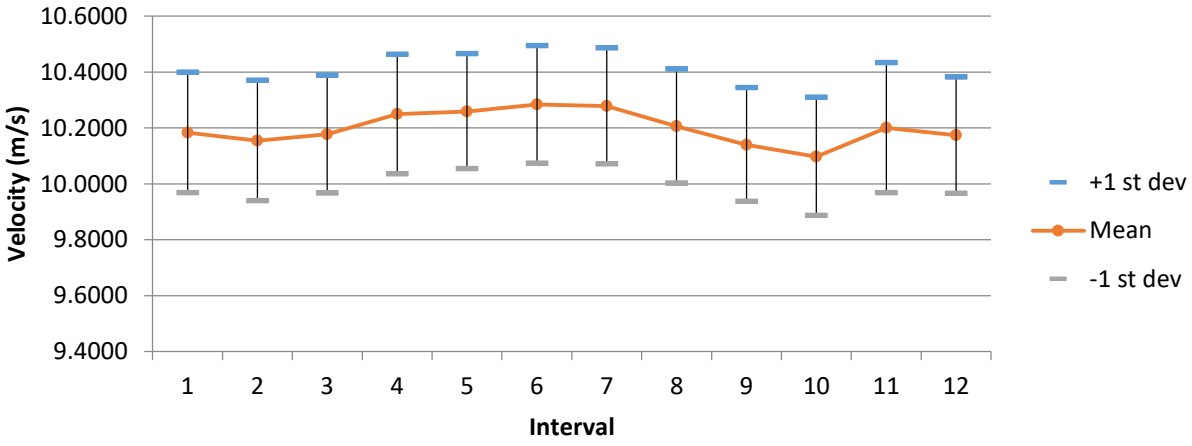
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 153
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: C5
First Sample Date: 19-Aug-13 First Sample Time: 09:28:12.343

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	7.6915	10.9319	9.1135	0.3103
u	6.0300	10.2000	8.4178	0.3902
v	-6.5500	-0.5220	-3.2762	0.8149
w	-3.9700	2.7100	-0.5328	0.6772

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	10.3552	7.9134	9.0896	0.3010	3.3118
2	10.1702	7.9004	9.1121	0.2905	3.1884
3	10.2655	8.0475	9.1454	0.2810	3.0726
4	10.6850	7.6915	9.1086	0.2968	3.2584
5	10.0637	8.2430	9.1196	0.2473	2.7119
6	10.5707	8.2211	9.2195	0.2794	3.0301
7	10.4088	8.2216	9.2890	0.3062	3.2968
8	10.7276	7.7824	9.2126	0.3345	3.6311
9	10.2119	7.8059	8.9764	0.2828	3.1510
10	10.2167	8.0376	8.9959	0.2729	3.0337
11	10.0714	7.7873	8.9835	0.2805	3.1222
12	10.9319	7.8459	9.1094	0.3633	3.9886
		Average	9.1135	0.2947	3.2331
		St Dev	0.0968	0.0301	0.3082

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.2313	-3.6935	-0.4546	0.3727	0.8259	0.5353	4.5275	10.0331	6.5032
2	8.2571	-3.7438	-0.5921	0.3088	0.4717	0.5011	3.7393	5.7126	6.0690
3	8.3065	-3.7170	-0.3144	0.3146	0.6048	0.5835	3.7879	7.2816	7.0252
4	8.6219	-2.7934	-0.1520	0.3346	0.7434	0.4763	3.8806	8.6220	5.5243
5	8.7892	-2.3534	-0.2375	0.2583	0.3703	0.4236	2.9386	4.2130	4.8197
6	8.6876	-2.9053	-0.6497	0.3033	0.5557	0.5825	3.4909	6.3962	6.7055
7	8.6500	-2.8995	-1.0760	0.3948	0.9407	0.9755	4.5637	10.8753	11.2770
8	8.2875	-3.8165	-0.5374	0.4011	0.7582	0.8436	4.8399	9.1487	10.1796
9	8.2476	-3.4285	-0.4037	0.3090	0.5302	0.5817	3.7471	6.4280	7.0525
10	8.3426	-3.2119	-0.4917	0.3487	0.6779	0.5125	4.1796	8.1263	6.1427
11	8.3292	-3.1583	-0.7322	0.3274	0.6328	0.6222	3.9308	7.5978	7.4697
12	8.2636	-3.5922	-0.7520	0.3457	0.8446	0.7238	4.1831	10.2207	8.7587

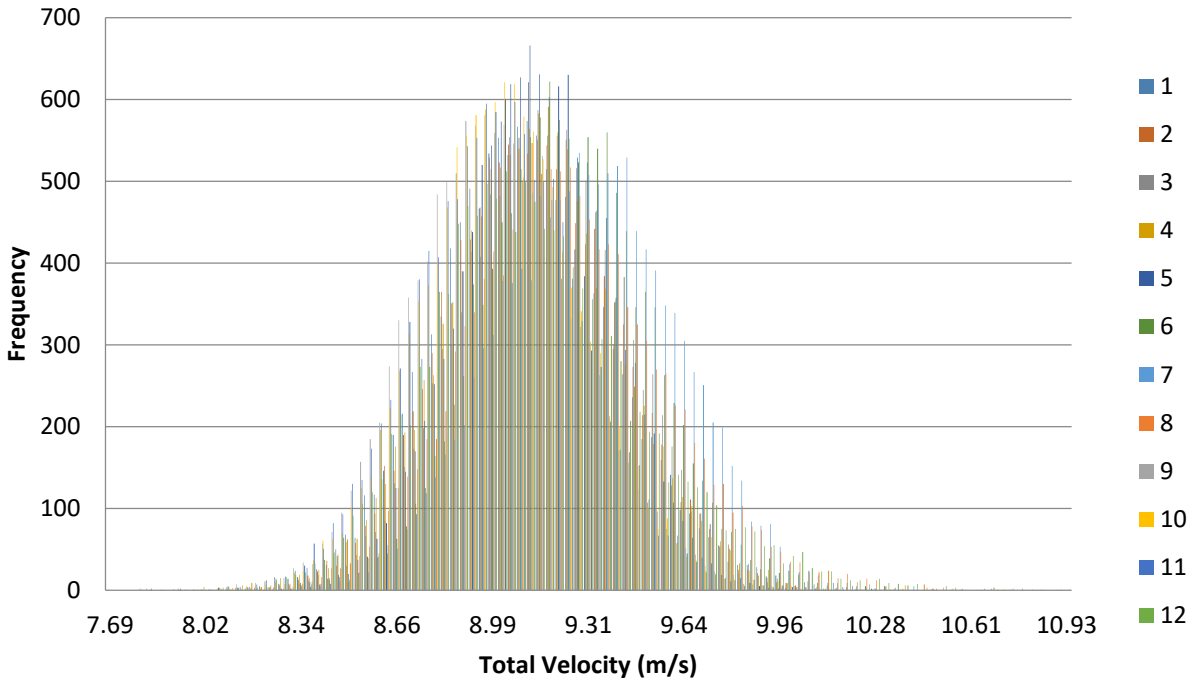


Figure 1. Velocity histogram for each interval (100 bins).

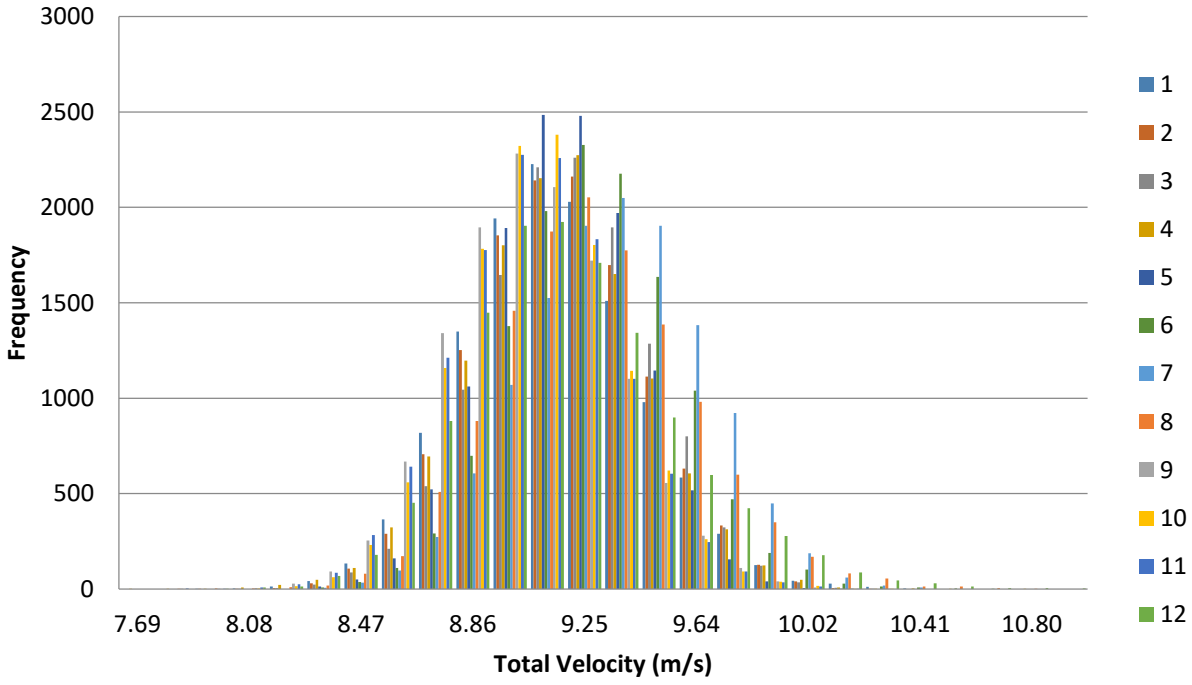
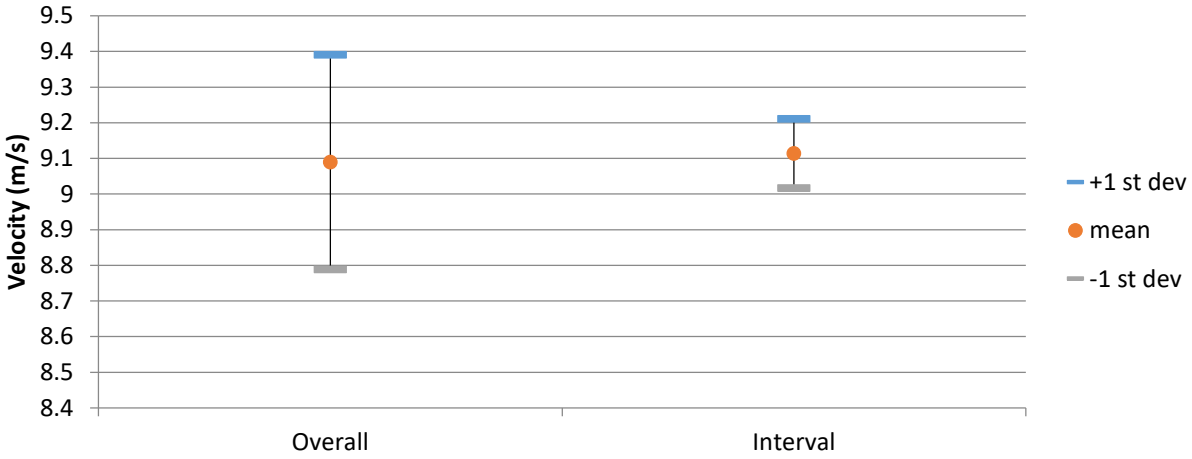
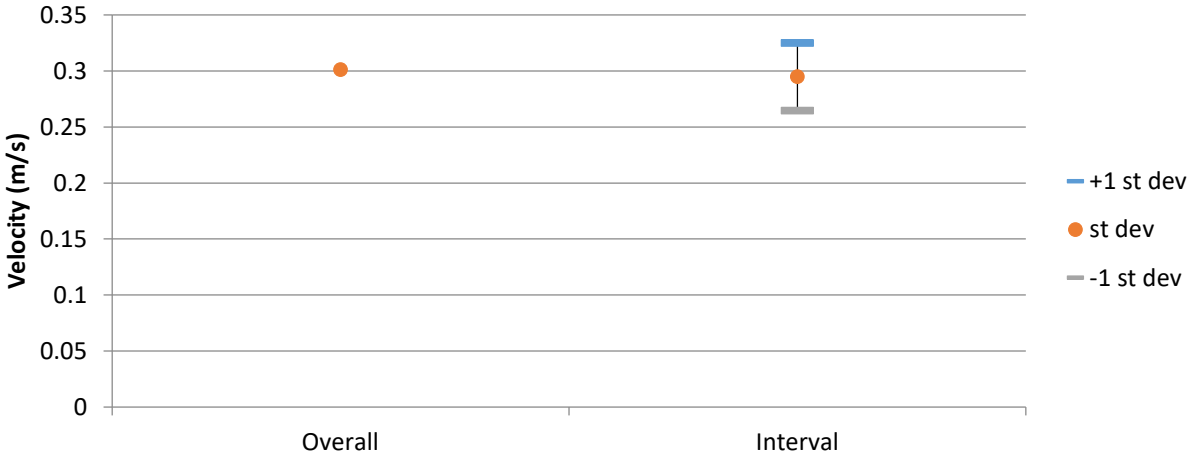


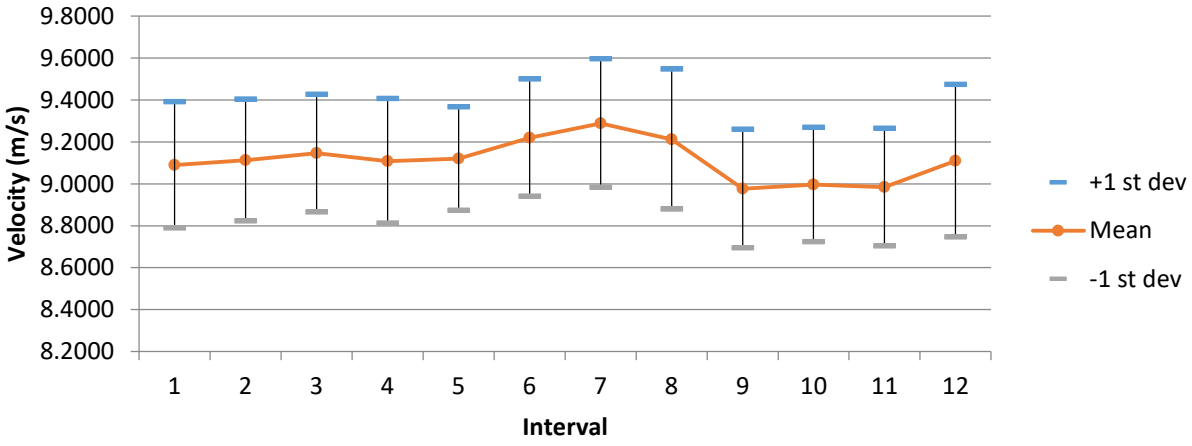
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 154
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: C4
First Sample Date: 19-Aug-13 First Sample Time: 09:31:17.437

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	6.1089	12.6743	9.0947	0.3782
u	5.4500	11.6000	8.7031	0.4258
v	-7.5000	1.9900	-2.2243	0.8227
w	-5.4700	2.6300	-0.7805	0.8357

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	10.5809	7.4194	9.0799	0.3630	3.9984
2	10.1246	7.5818	8.9551	0.3450	3.8529
3	10.3120	7.8051	9.0358	0.3564	3.9443
4	10.3417	7.8484	9.1701	0.3463	3.7767
5	10.3181	7.5468	9.1110	0.3642	3.9975
6	11.6070	7.7174	9.2815	0.3826	4.1224
7	12.6743	6.1089	9.2200	0.4567	4.9535
8	11.2406	7.6458	9.0946	0.3876	4.2615
9	10.1655	7.5792	9.0421	0.3506	3.8774
10	10.1890	7.6607	9.0349	0.3540	3.9179
11	10.5321	7.7357	9.0460	0.3382	3.7383
12	10.2214	7.4245	9.0662	0.3593	3.9627
		Average	9.0948	0.3670	4.0336
		St Dev	0.0901	0.0318	0.3089

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.6671	-2.2307	-1.0643	0.4027	0.6056	0.9053	4.6457	6.9873	10.4455
2	8.6403	-2.1853	-0.5614	0.3535	0.4898	0.4499	4.0915	5.6690	5.2074
3	8.7154	-2.2330	-0.3443	0.3770	0.5598	0.5047	4.3257	6.4230	5.7915
4	8.9824	-1.6451	-0.0793	0.3614	0.5857	0.5849	4.0235	6.5210	6.5111
5	8.8872	-1.7950	-0.1783	0.3826	0.6142	0.6197	4.3055	6.9108	6.9730
6	9.1146	-0.9875	-0.9117	0.3805	0.6638	0.9086	4.1745	7.2829	9.9687
7	8.5638	-2.5276	-1.8303	0.4544	0.8896	1.0684	5.3065	10.3876	12.4763
8	8.4902	-2.8212	-1.1079	0.4231	0.8830	0.7957	4.9834	10.4004	9.3724
9	8.6141	-2.6037	-0.5761	0.3540	0.3759	0.5493	4.1101	4.3639	6.3766
10	8.6576	-2.3189	-0.8231	0.3619	0.5228	0.5836	4.1804	6.0384	6.7405
11	8.6214	-2.4620	-0.9069	0.3530	0.5291	0.5724	4.0948	6.1372	6.6394
12	8.4840	-2.8802	-0.9817	0.3770	0.7978	0.5558	4.4437	9.4033	6.5514

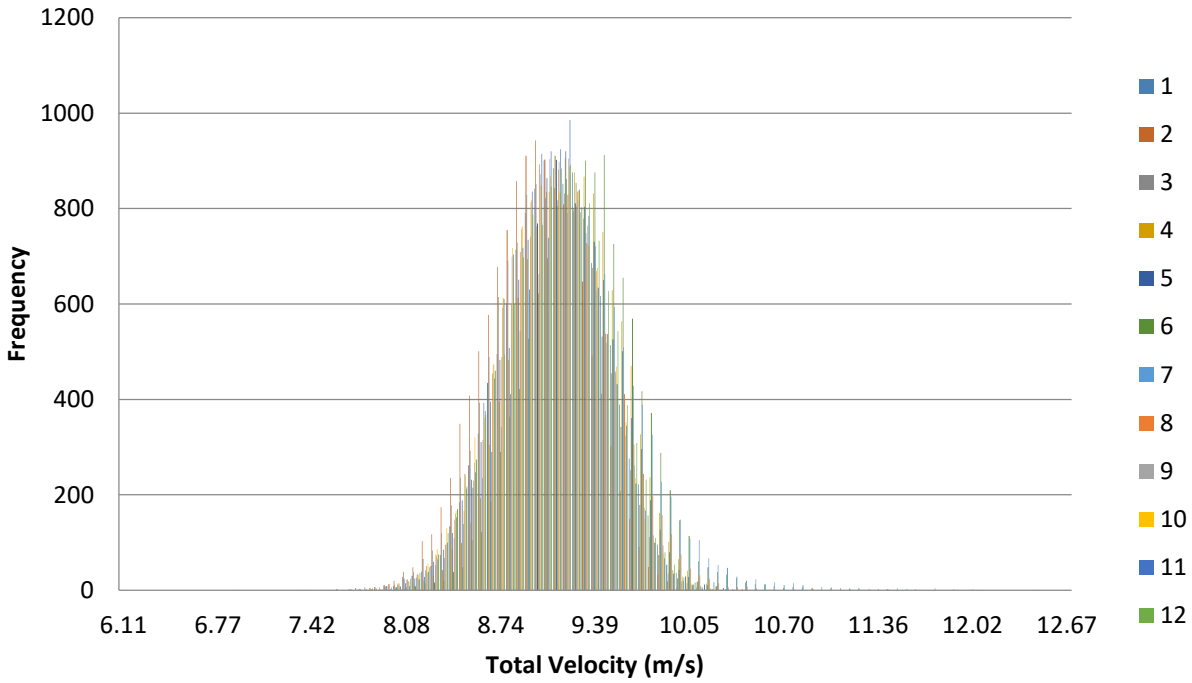


Figure 1. Velocity histogram for each interval (100 bins).

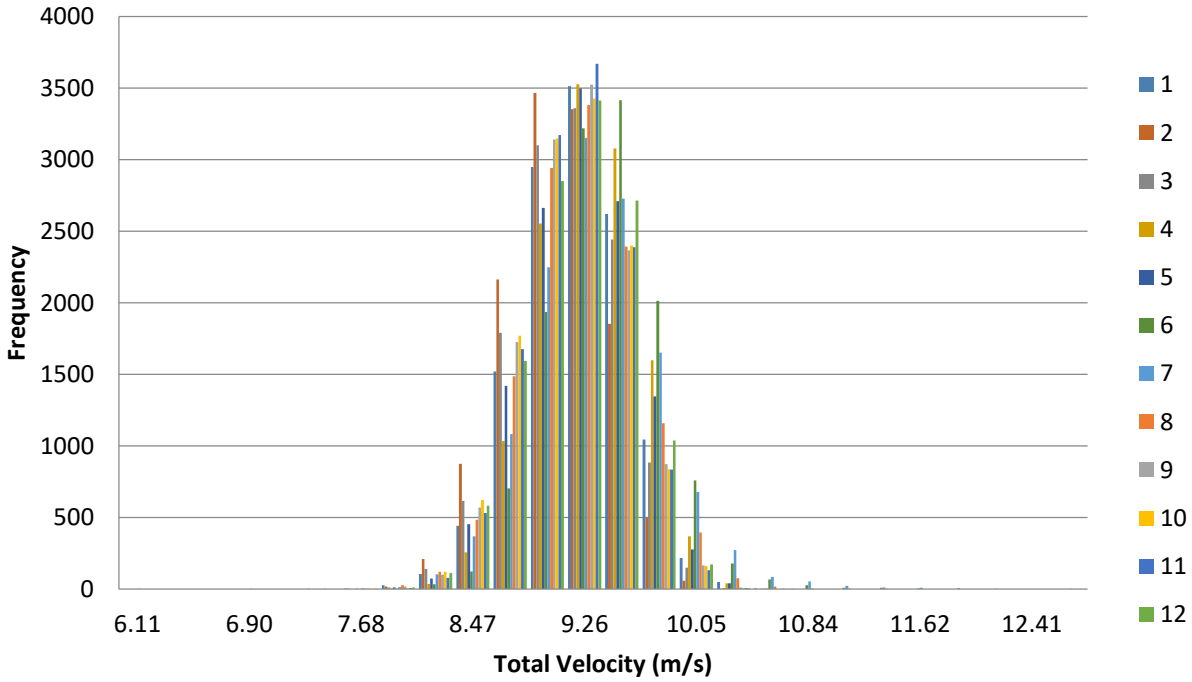
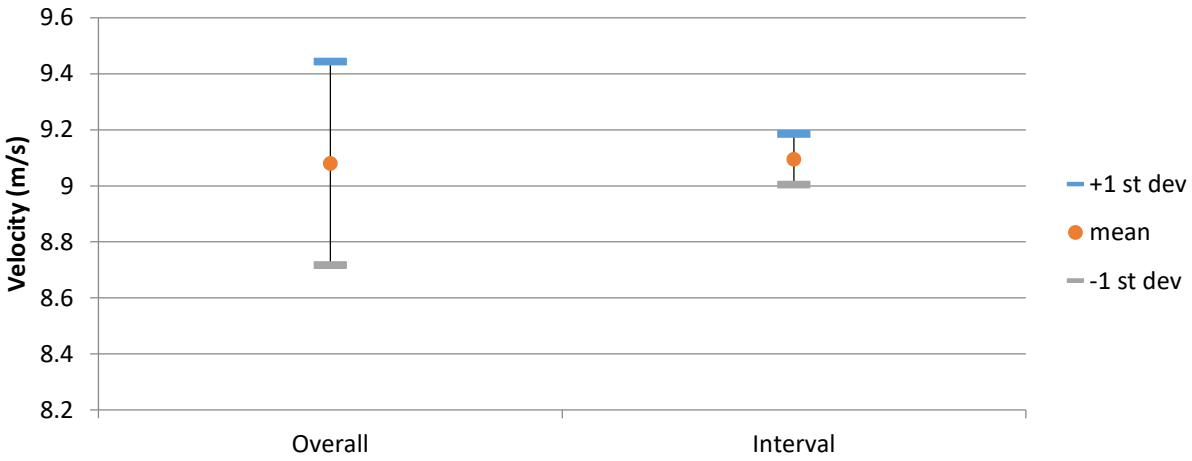
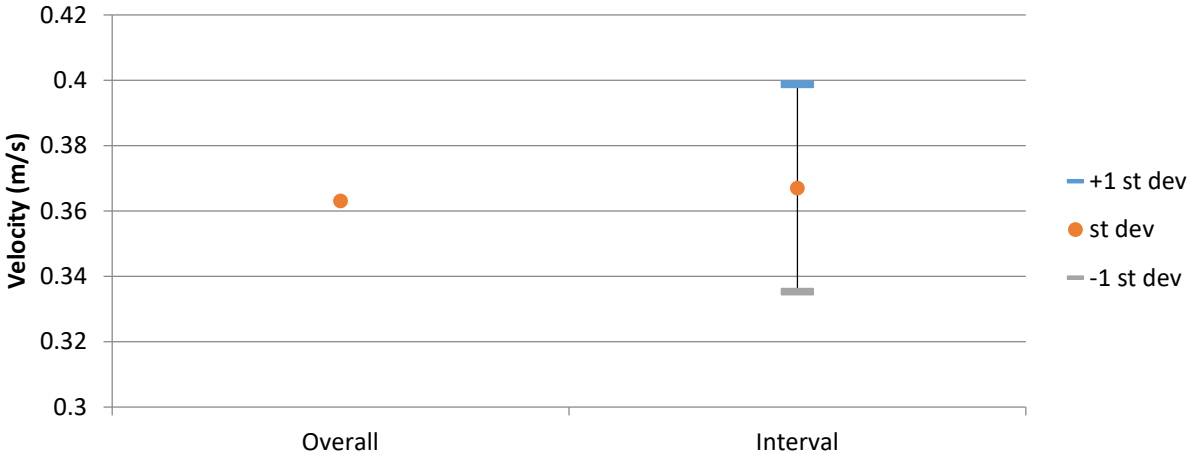


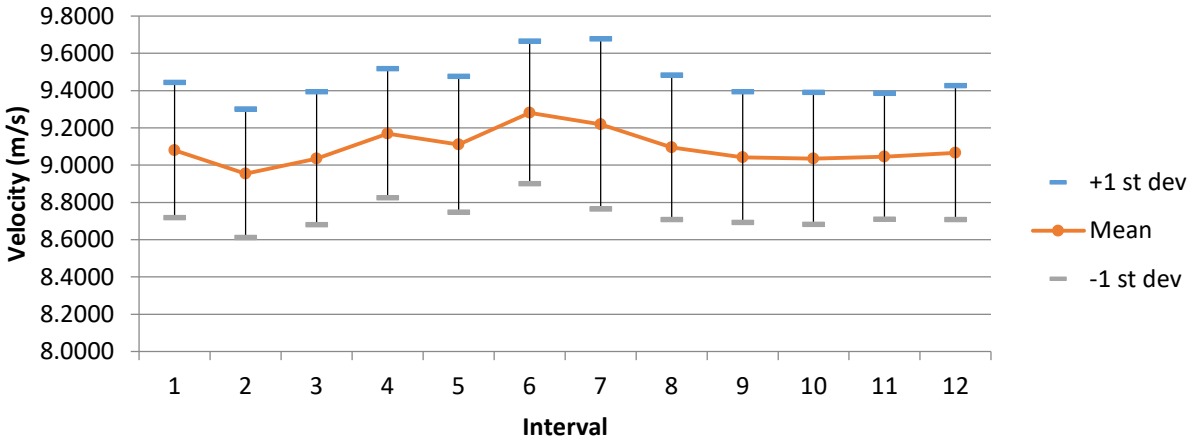
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 155
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: C2
First Sample Date: 19-Aug-13 First Sample Time: 09:33:50.234

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	9.0883	14.2960	10.7744	0.5454
u	6.2600	12.0000	9.2248	0.6702
v	-8.4000	0.5090	-3.8155	1.0910
w	-7.8800	0.1650	-3.7793	0.8989

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)	# Zero Values	% Zero Values
1	14.2960	9.3015	10.9740	0.7097	6.4672	27	0.22 %
2	13.2231	9.2158	10.8850	0.4940	4.5381	0	0.00 %
3	14.1031	9.4970	11.4661	0.5395	4.7053	0	0.00 %
4	14.2873	9.3235	11.1494	0.6392	5.7334	5	0.04 %
5	12.8765	9.1491	10.6181	0.4170	3.9275	0	0.00 %
6	12.8699	9.0883	10.6841	0.4217	3.9466	0	0.00 %
7	11.6981	9.1961	10.4338	0.3128	2.9981	0	0.00 %
8	12.1123	9.4304	10.5897	0.3714	3.5072	0	0.00 %
9	12.3823	9.2982	10.7103	0.3648	3.4057	0	0.00 %
10	12.0706	9.4940	10.7051	0.3649	3.4082	0	0.00 %
11	12.0731	9.3974	10.5241	0.3483	3.3092	0	0.00 %
12	14.0168	9.4148	10.5537	0.4167	3.9482	15	0.12 %
		Average	10.7745	0.4500	4.2637		
		St Dev	0.2849	0.117642	1.0555		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.4145	-3.2676	-4.0408	1.0661	1.2896	1.5799	11.3242	13.6978	16.7814
2	9.2558	-3.6967	-4.1644	0.6488	0.9123	0.8925	7.0095	9.8563	9.6421
3	9.6688	-5.2325	-3.0615	0.5617	0.8214	0.7318	5.8092	8.4957	7.5691
4	8.8100	-5.2014	-4.1842	0.7832	1.1315	0.8028	8.8900	12.8433	9.1123
5	8.7344	-4.1971	-4.1639	0.5816	0.8834	0.7453	6.6587	10.1140	8.5326
6	9.3213	-3.6356	-3.5068	0.5424	0.9610	0.8409	5.8191	10.3098	9.0216
7	9.0656	-3.2822	-3.8878	0.4364	0.6127	0.5693	4.8143	6.7583	6.2795
8	9.1117	-3.7534	-3.7921	0.4769	0.5762	0.4794	5.2339	6.3241	5.2614
9	9.4022	-3.3610	-3.6434	0.5682	0.7259	1.0102	6.0431	7.7209	10.7444
10	9.3740	-3.5475	-3.5939	0.5025	0.7305	0.7576	5.3604	7.7927	8.0818
11	9.3109	-3.0769	-3.7484	0.4737	0.4638	0.4765	5.0877	4.9809	5.1174
12	9.2288	-3.5327	-3.5646	0.5477	0.7323	0.6004	5.9352	7.9347	6.5063

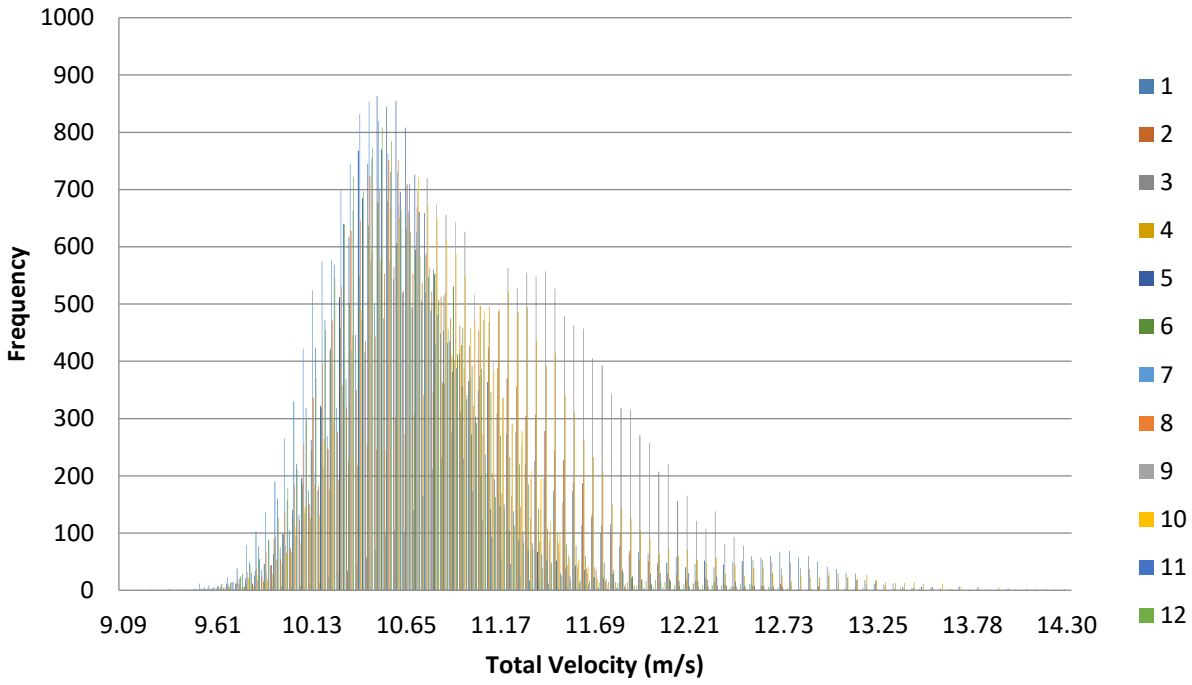


Figure 1. Velocity histogram for each interval (100 bins).

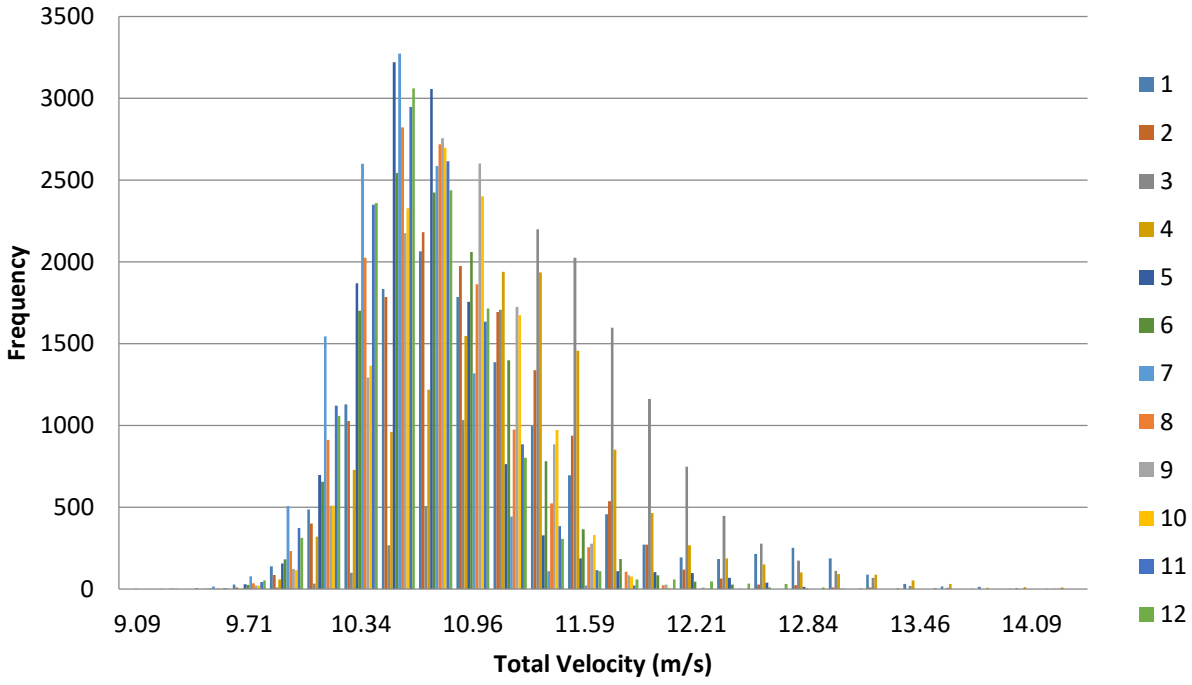
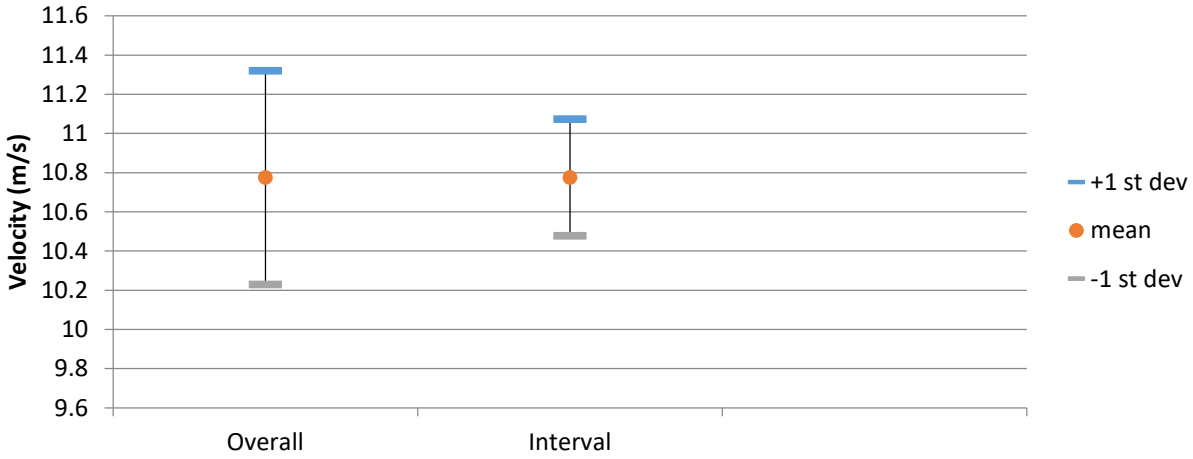
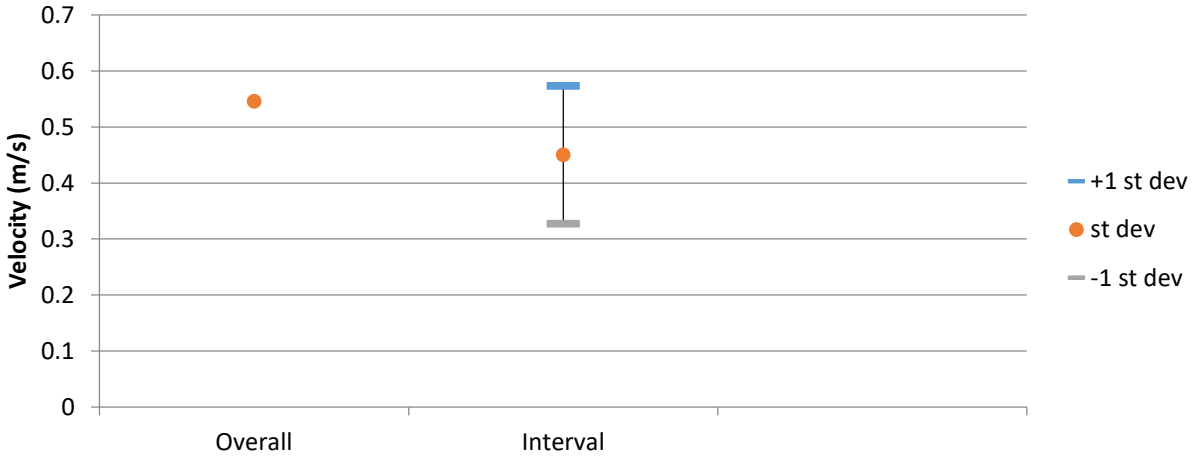


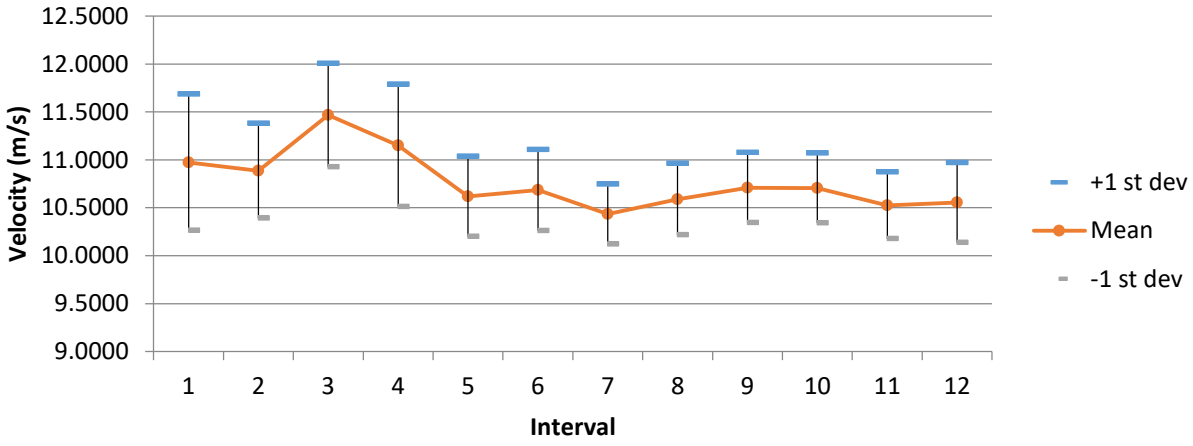
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 156
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: C3
First Sample Date: 19-Aug-13 First Sample Time: 09:36:24.687

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	8.4102	13.1636	10.0103	0.5296
u	7.1600	11.4000	9.1758	0.3834
v	-7.0300	1.3200	-3.4667	1.0417
w	-6.0400	3.0400	-1.3803	1.0662

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	13.1351	9.3366	10.8289	0.4767	4.4020
2	12.5260	9.1351	10.4353	0.3840	3.6795
3	12.7583	9.2291	10.4310	0.4909	4.7059
4	11.3666	8.7002	9.6884	0.3414	3.5243
5	11.4614	8.4148	9.8176	0.3653	3.7213
6	11.5566	8.7016	9.8834	0.3612	3.6548
7	11.0110	8.5813	9.7896	0.2926	2.9884
8	10.9912	8.4221	9.6184	0.3133	3.2576
9	11.4419	8.4144	9.7327	0.3445	3.5396
10	12.6061	8.4102	9.8089	0.4111	4.1908
11	11.8960	8.4657	9.9832	0.3359	3.3647
12	13.1636	8.6573	10.1066	0.5201	5.1460
		Average	10.0103	0.3864	3.8479
		St Dev	0.3711	0.0733	0.6088

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.4856	-4.7604	-2.0301	0.3243	0.4294	0.6656	3.4188	4.5272	7.0174
2	9.3716	-3.7120	-2.5622	0.3107	0.6697	0.5727	3.3154	7.1462	6.1110
3	9.1131	-4.3804	-2.4017	0.3123	0.7640	0.5999	3.4265	8.3840	6.5828
4	9.0333	-2.9986	-1.4160	0.2933	0.8164	0.7939	3.2471	9.0380	8.7886
5	9.3623	-2.3604	-1.2348	0.3241	0.7992	1.0126	3.4619	8.5366	10.8156
6	8.8607	-3.9666	-1.6497	0.2743	0.6526	0.5863	3.0960	7.3650	6.6170
7	8.8465	-3.9160	-1.2640	0.2643	0.4789	0.6542	2.9875	5.4138	7.3946
8	8.8816	-3.4097	-1.1229	0.2565	0.5393	0.6961	2.8883	6.0717	7.8372
9	9.4292	-2.0646	-0.0440	0.3842	0.8635	0.8806	4.0743	9.1577	9.3388
10	9.1905	-2.9337	-0.8913	0.3380	0.9881	1.1946	3.6776	10.7518	12.9979
11	9.1432	-3.6480	-1.1761	0.2621	0.5922	1.0336	2.8666	6.4775	11.3049
12	9.3915	-3.4493	-0.7719	0.3637	0.8562	0.9248	3.8725	9.1172	9.8476

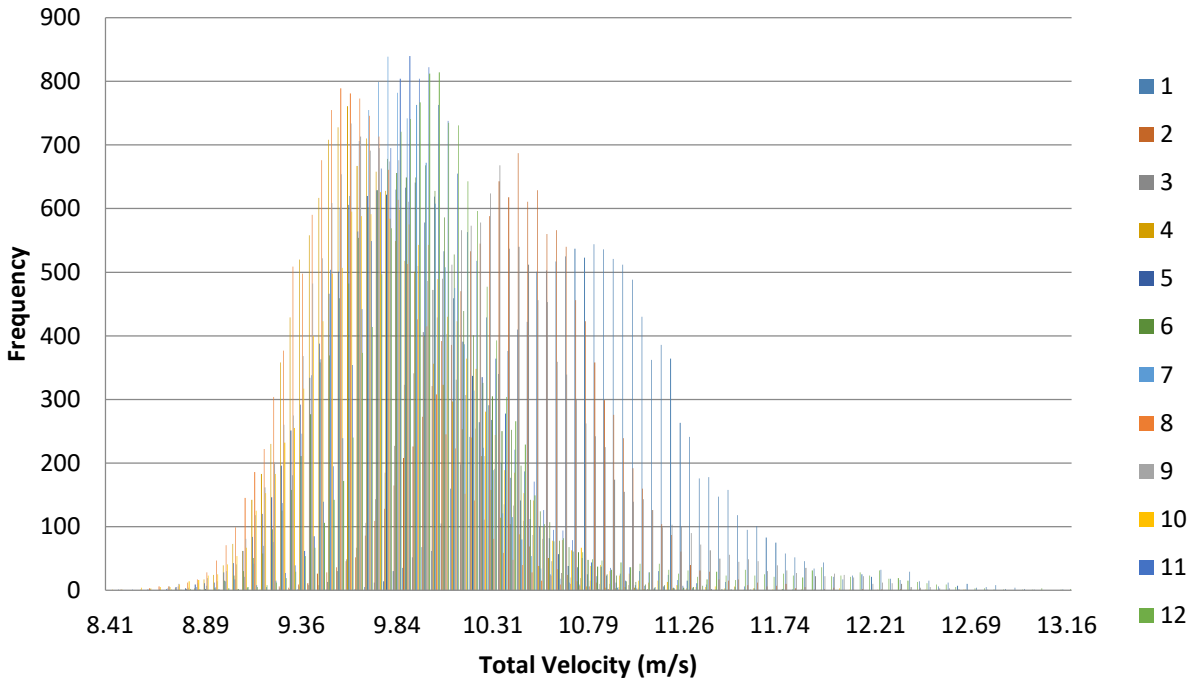


Figure 1. Velocity histogram for each interval (100 bins).

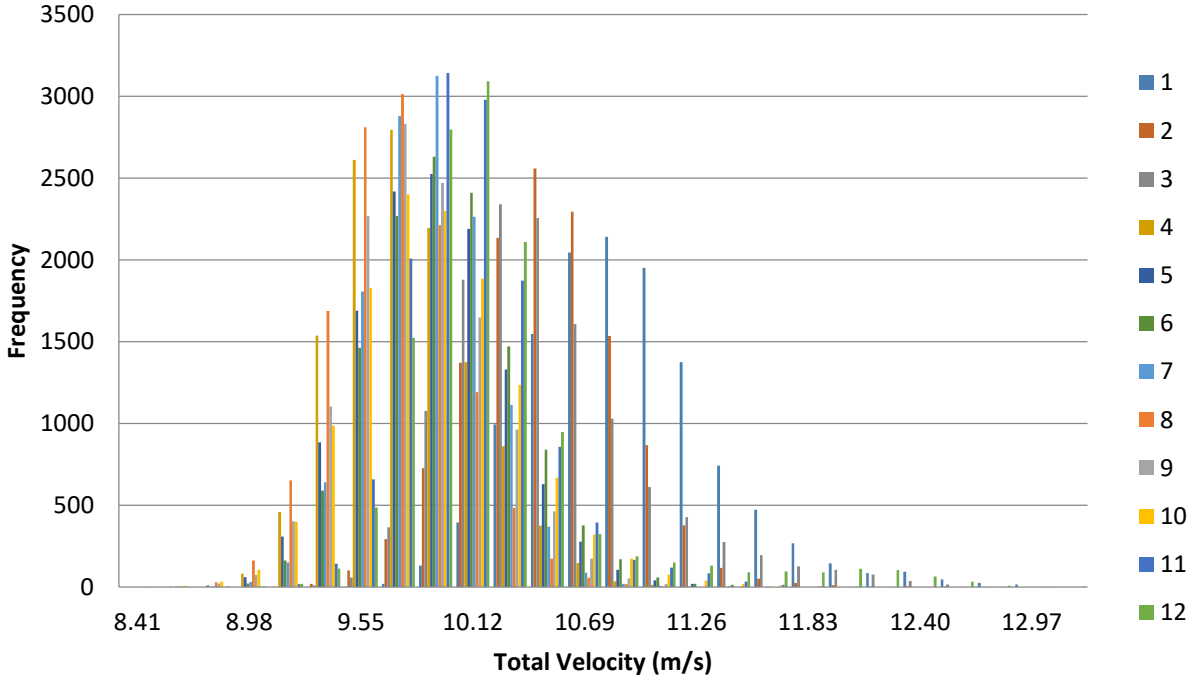
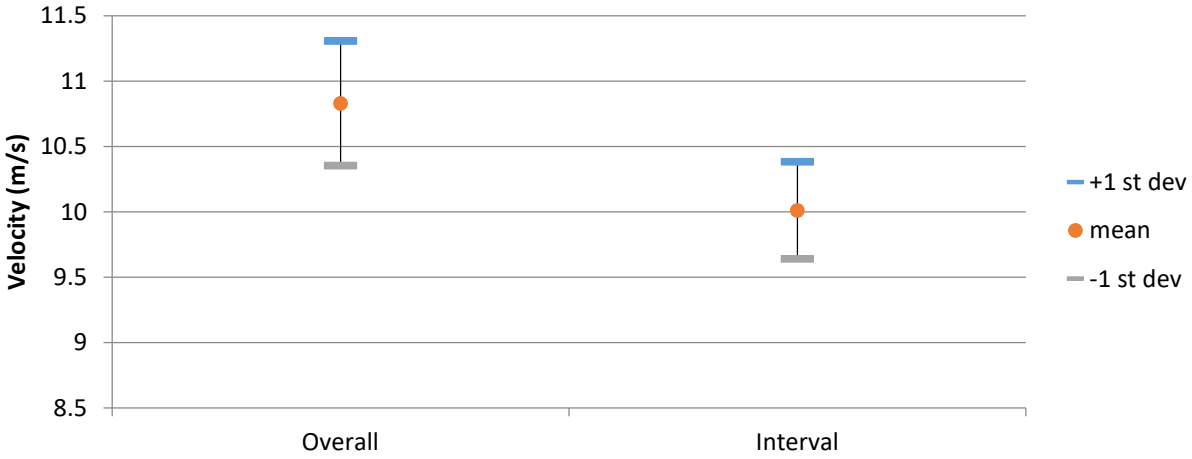
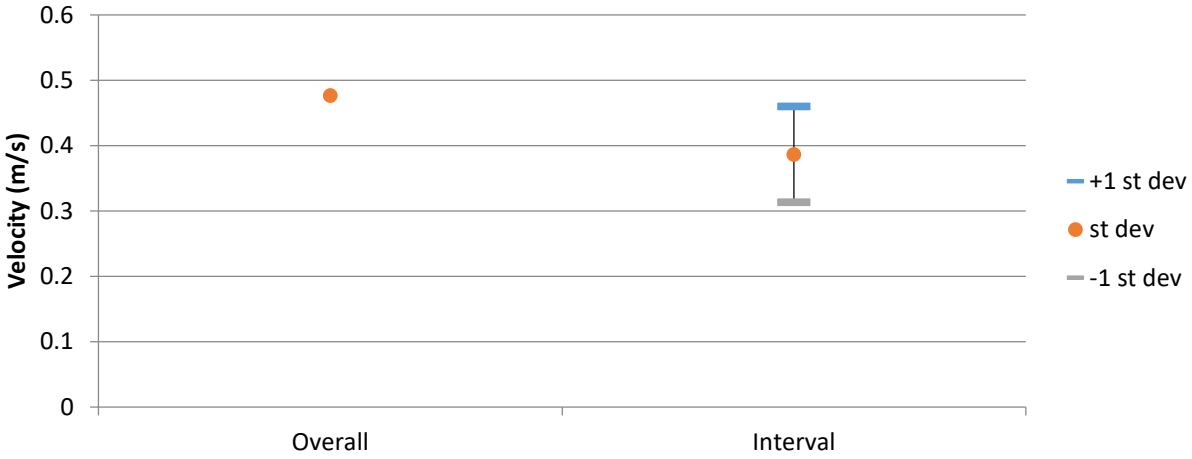


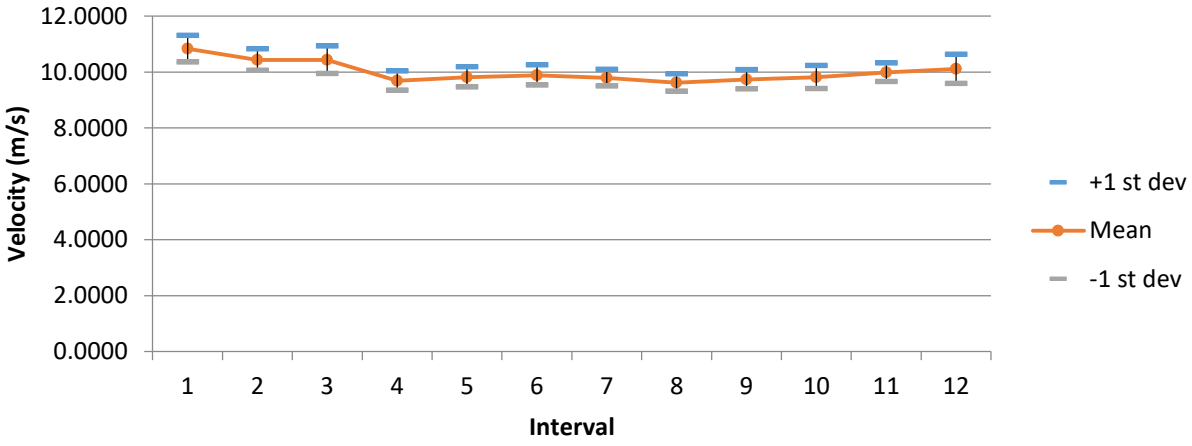
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 157
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 19-Aug-13 First Sample Time: 09:39:10.250

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	8.6051	22.0058	11.8052	0.9336
u	7.3800	16.6000	11.2222	0.8214
v	-2.6700	13.8000	1.9705	1.5062
w	-9.3900	2.4800	-2.2932	1.4875

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)	# Zero Values	% Zero Values
1	17.9263	10.0870	12.7267	1.4482	11.3793	0	0.00 %
2	14.0272	10.0027	11.3466	0.3220	2.8379	0	0.00 %
3	15.2510	10.1350	11.5588	0.4784	4.1385	0	0.00 %
4	18.3225	9.7556	11.9626	0.5270	4.4053	0	0.00 %
5	13.9613	8.9063	11.3755	0.3931	3.4553	0	0.00 %
6	19.4359	9.9099	12.2715	0.8939	7.2848	0	0.00 %
7	16.4845	8.6051	12.0220	0.6061	5.0415	0	0.00 %
8	22.0058	10.0269	12.9992	1.4130	10.8697	0	0.00 %
9	16.1533	10.2799	11.6084	0.3170	2.7311	0	0.00 %
10	11.9575	10.5546	11.2751	0.1981	1.7570	0	0.00 %
11	12.3295	10.2051	11.0987	0.2551	2.2986	0	0.00 %
12	15.1396	10.1751	11.4162	0.4885	4.2788	35	0.28 %
		Average	11.8051	0.6117	5.3900		
		St Dev	0.5766	0.406039	3.2042		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	12.1436	2.8957	-1.5127	1.4546	1.1275	1.5938	11.9786	9.2849	13.1246
2	11.0550	0.9373	-1.9564	0.3148	0.8798	1.0281	2.8475	7.9580	9.2998
3	11.2636	1.7219	-1.1688	0.3107	1.1892	1.0605	2.7580	10.5583	9.4150
4	11.4805	2.7331	-1.2879	0.3899	1.0916	1.0519	3.3964	9.5086	9.1624
5	11.0263	0.6248	-2.2960	0.3795	1.0856	0.9955	3.4417	9.8453	9.0286
6	11.6669	2.8397	-1.7357	0.8218	1.0167	1.5766	7.0439	8.7145	13.5138
7	11.5178	2.2245	-2.0187	0.4711	1.2037	1.2426	4.0898	10.4505	10.7886
8	11.8938	4.1825	-2.1684	0.7711	1.9201	1.7431	6.4834	16.1437	14.6555
9	10.8615	1.9078	-3.5044	0.2974	0.7362	0.5770	2.7381	6.7779	5.3128
10	10.7601	1.0495	-3.1432	0.1916	0.4797	0.3728	1.7803	4.4584	3.4649
11	10.5304	1.1293	-2.9740	0.3849	0.8712	1.1529	3.6550	8.2731	10.9480
12	10.4644	1.3997	-3.7544	0.7810	1.3103	1.6379	7.4632	12.5214	15.6518

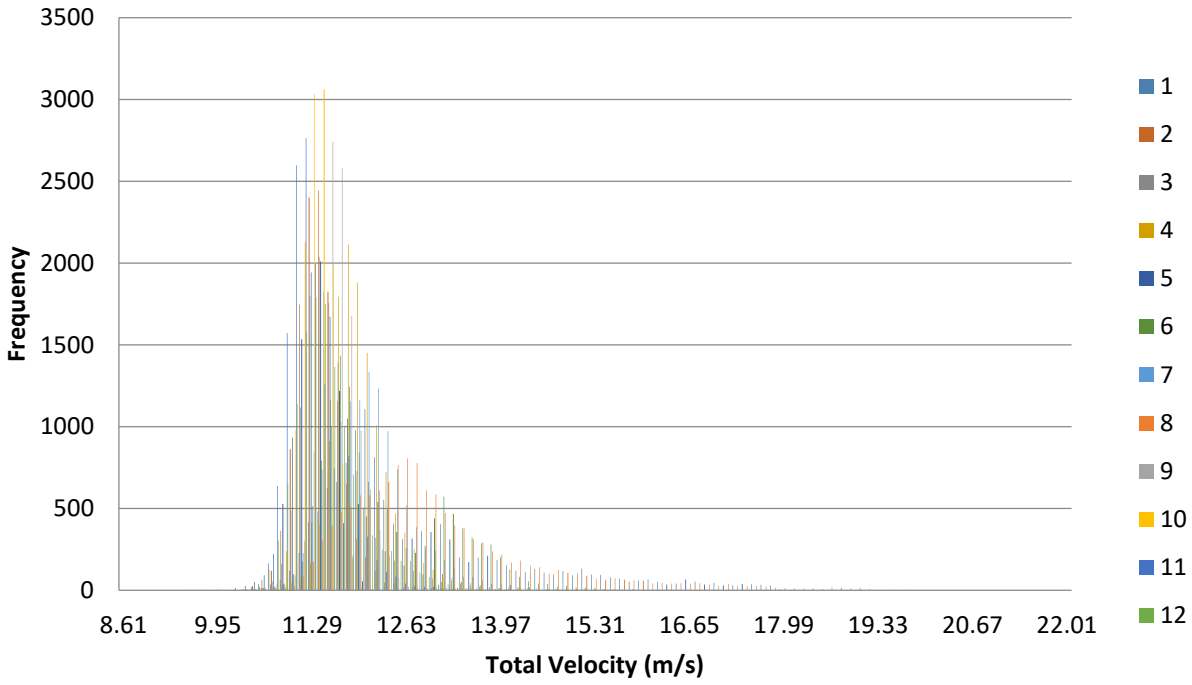


Figure 1. Velocity histogram for each interval (100 bins).

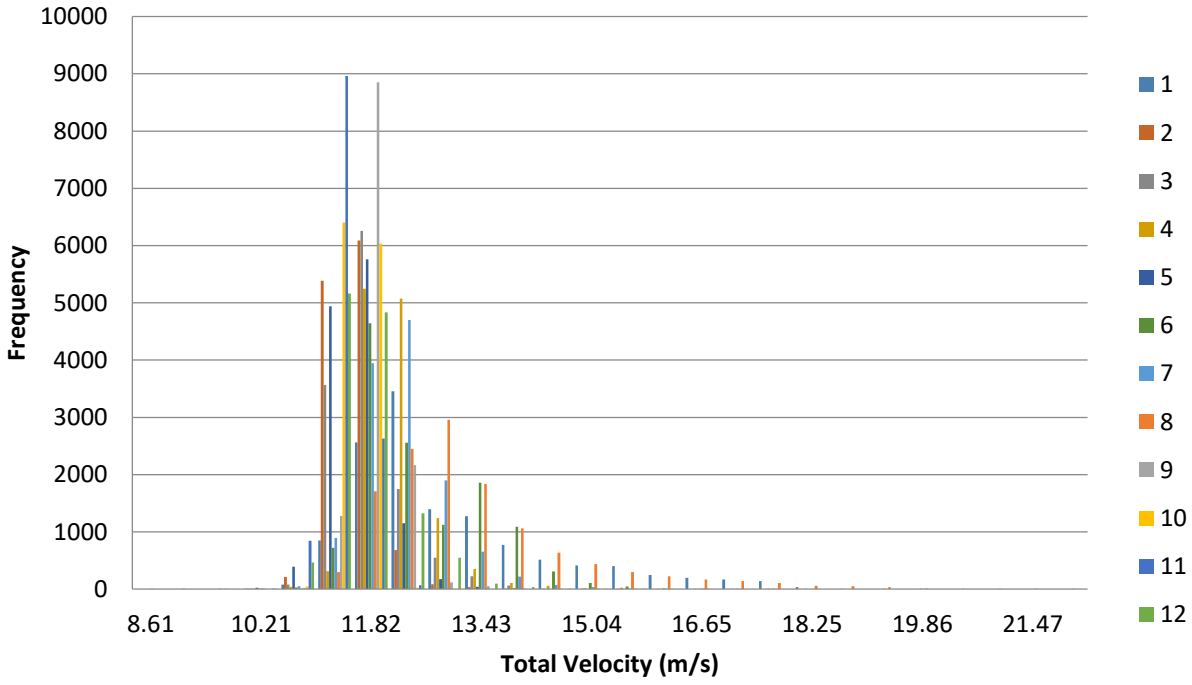
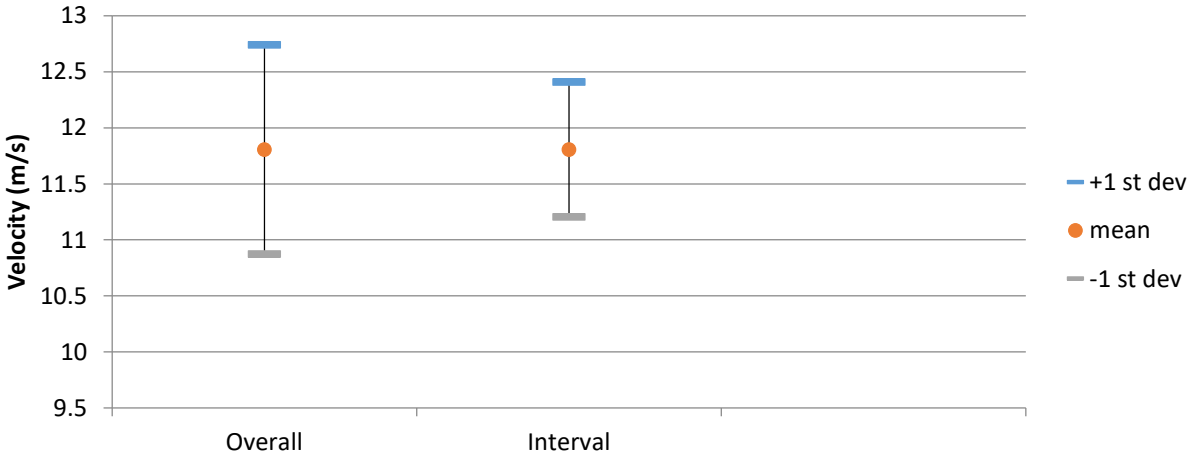
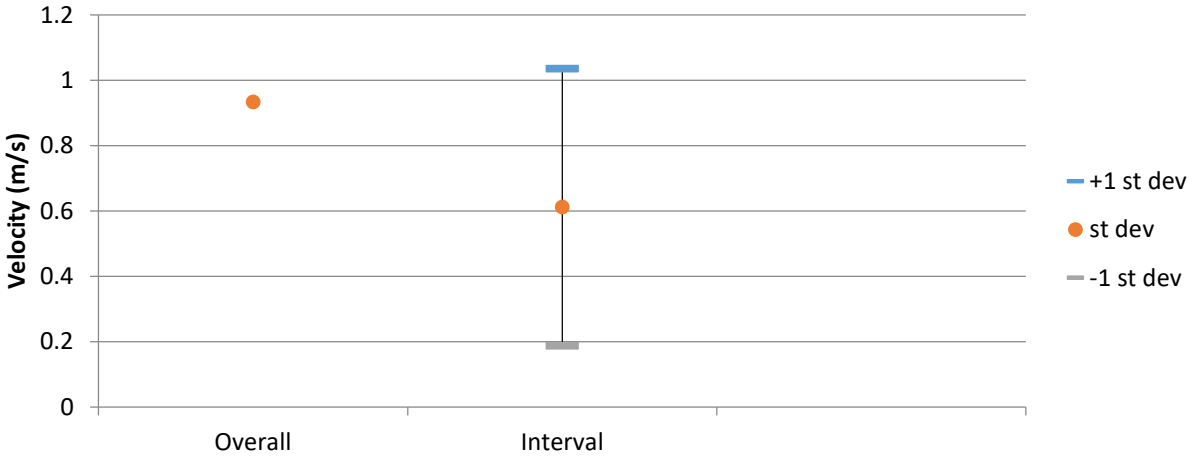


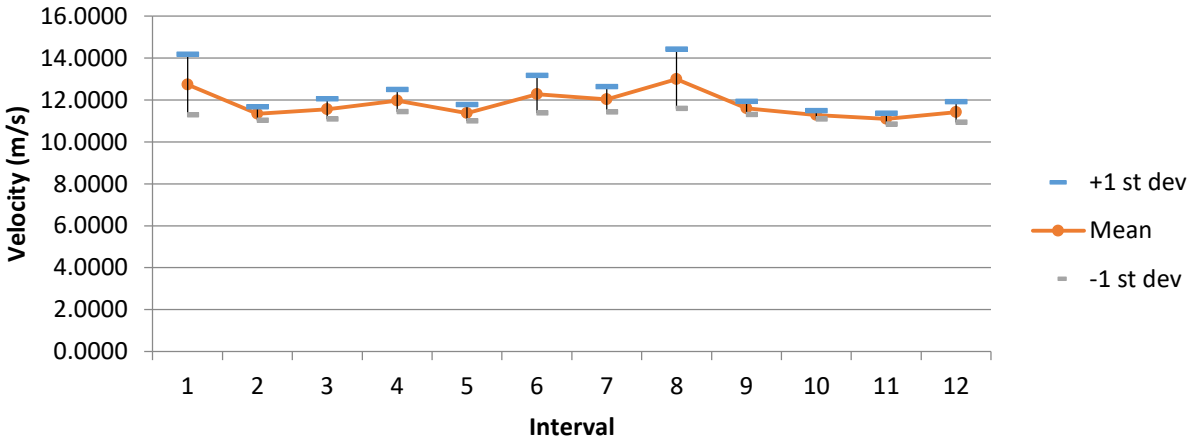
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 158
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 19-Aug-13 First Sample Time: 09:42:10.046

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	9.1676	14.6544	11.1613	0.2792
u	7.1800	12.5000	10.6647	0.3180
v	-2.5900	7.5400	1.0158	0.8790
w	-9.3600	0.8840	-2.8690	0.8825

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)	# Zero Values	% Zero Values
1	11.8367	10.3037	11.0768	0.1808	1.6322	0	0.00 %
2	11.9265	10.4114	11.1303	0.1913	1.7184	0	0.00 %
3	13.1045	10.2204	11.1596	0.2449	2.1944	0	0.00 %
4	14.6544	9.1676	11.3613	0.3997	3.5177	20	0.16 %
5	13.0486	10.3908	11.4283	0.3374	2.9524	0	0.00 %
6	12.6825	10.0988	11.3223	0.2474	2.1849	0	0.00 %
7	12.3094	10.4376	11.2925	0.2189	1.9383	0	0.00 %
8	11.7968	10.1958	11.0783	0.2141	1.9324	0	0.00 %
9	11.8832	10.4308	11.0914	0.1794	1.6176	0	0.00 %
10	11.7210	10.4524	11.0740	0.1704	1.5385	0	0.00 %
11	11.5794	10.3196	10.9858	0.1592	1.4492	0	0.00 %
12	11.6918	10.3025	10.9351	0.1663	1.5204	0	0.00 %
		Average	11.1613	0.2258	2.1227		
		St Dev	0.1483	0.070782	0.6094		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.5502	0.7724	-3.2300	0.2274	0.3945	0.4292	2.1556	3.7391	4.0682
2	10.6216	0.8505	-3.1284	0.2413	0.5197	0.5134	2.2721	4.8932	4.8335
3	10.4734	1.3088	-3.5263	0.3328	0.5868	0.5510	3.1773	5.6031	5.2608
4	10.4201	1.4326	-3.8647	0.6836	1.0594	1.4430	6.5605	10.1671	13.8487
5	10.8335	1.9399	-2.8175	0.2615	0.9905	0.7780	2.4142	9.1425	7.1812
6	10.7293	1.6696	-3.0616	0.2817	0.6590	0.6813	2.6257	6.1417	6.3501
7	10.7924	1.5731	-2.8293	0.1950	0.5561	0.5155	1.8068	5.1523	4.7761
8	10.7973	1.2872	-1.7666	0.2018	0.8544	0.8030	1.8687	7.9134	7.4370
9	10.7638	0.5282	-2.4695	0.1743	0.6428	0.6079	1.6190	5.9715	5.6473
10	10.6423	0.0889	-3.0243	0.1663	0.2952	0.3653	1.5623	2.7743	3.4327
11	10.6428	0.2512	-2.6737	0.1512	0.3448	0.3035	1.4208	3.2401	2.8517
12	10.7096	0.4883	-2.0381	0.1680	0.5795	0.3899	1.5683	5.4111	3.6410

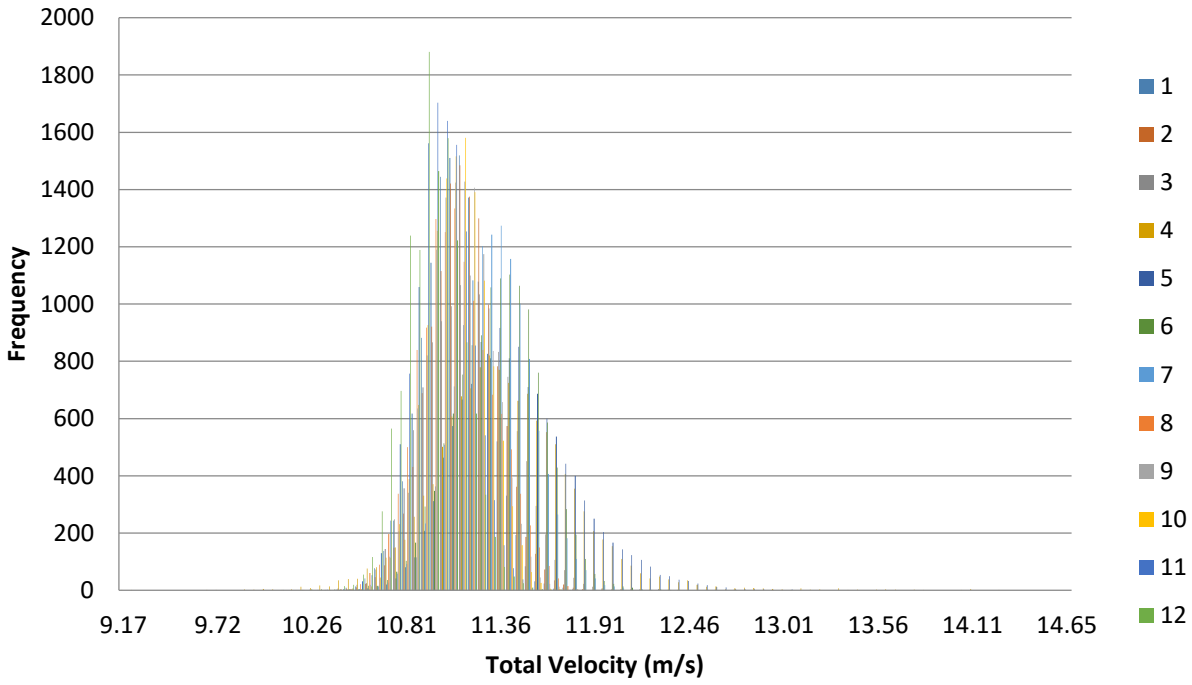


Figure 1. Velocity histogram for each interval (100 bins).

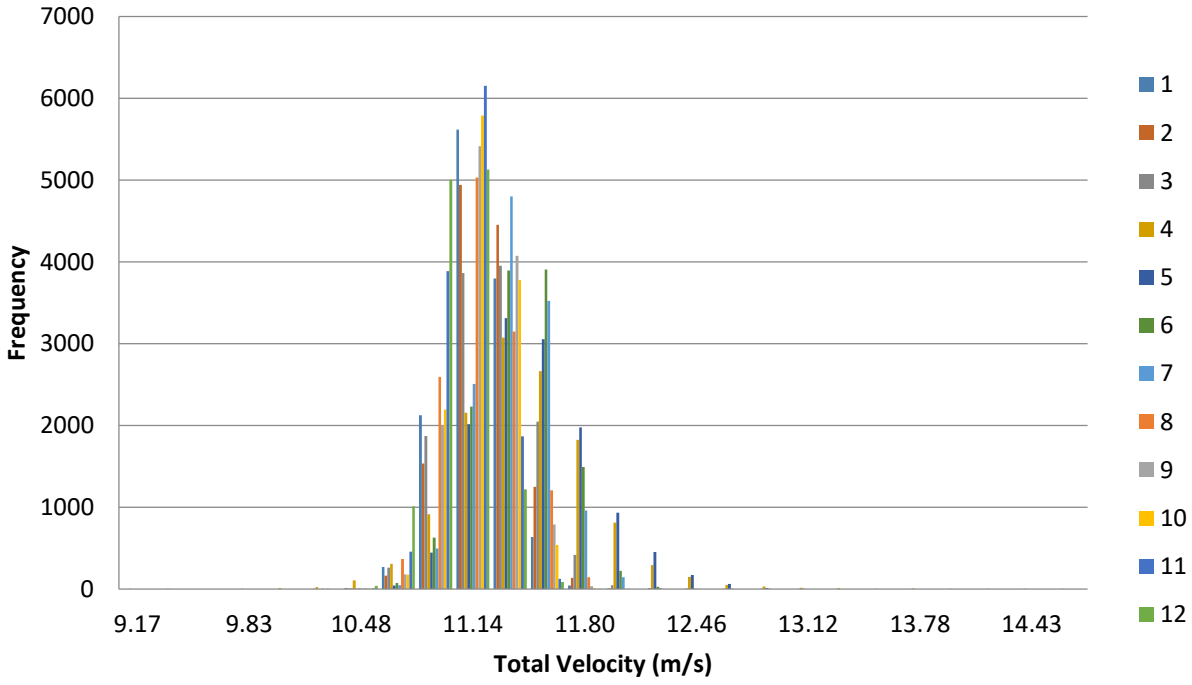
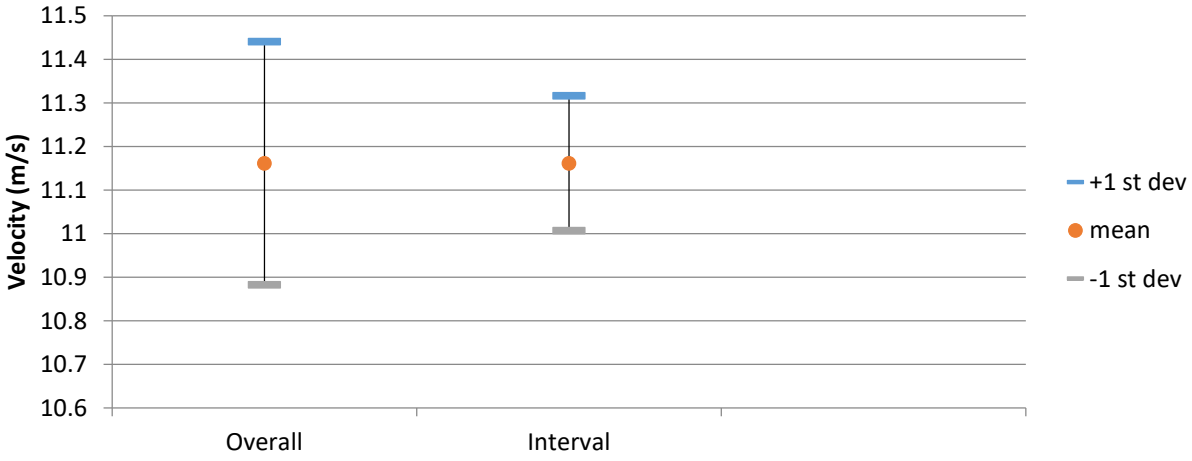
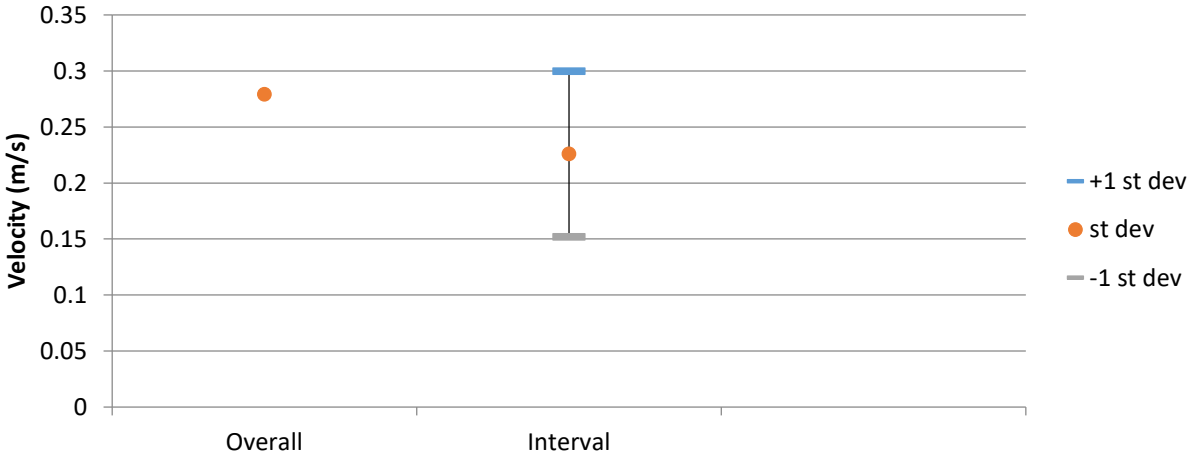


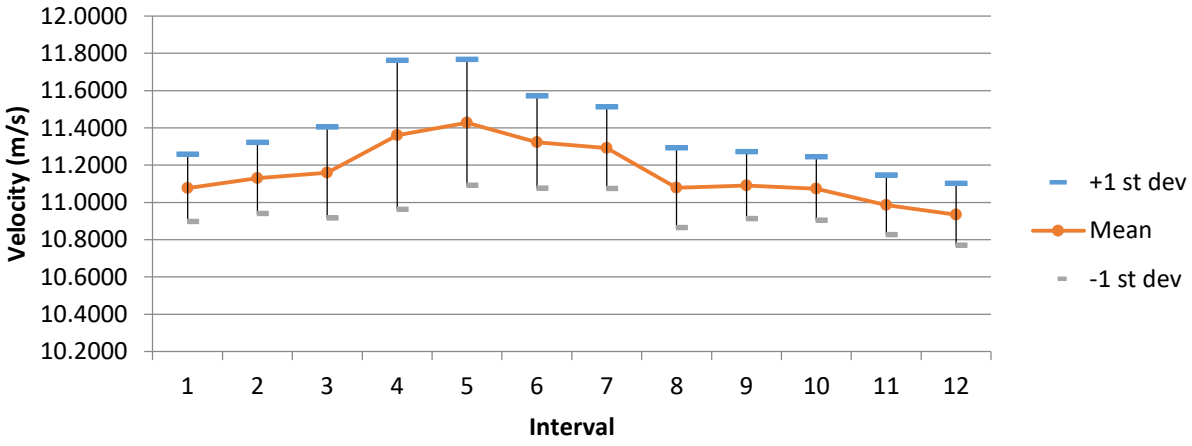
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 159
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: A3
First Sample Date: 19-Aug-13 First Sample Time: 09:45:09.296

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.6813	11.9521	7.9503	0.6962
u	3.7900	10.2000	6.2819	0.6306
v	-7.7500	-0.7940	-4.6716	0.7326
w	-3.8100	4.5900	-0.0447	1.2121

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)	# Zero Values	% Zero Values
1	9.3157	6.3501	7.6891	0.5316	6.9144	168	1.34 %
2	9.4024	6.3854	7.7343	0.5595	7.2340	7	0.06 %
3	9.6368	5.9631	7.7133	0.5274	6.8378	122	0.98 %
4	9.3225	5.9248	7.2803	0.4710	6.4698	2	0.02 %
5	8.7536	5.6813	7.0590	0.3619	5.1264	20	0.16 %
6	9.9923	6.5067	7.9308	0.4314	5.4396	86	0.69 %
7	10.6853	7.1957	8.3387	0.4024	4.8253	91	0.73 %
8	10.7784	7.1664	8.5720	0.4124	4.8107	63	0.50 %
9	11.4215	5.8062	8.2626	0.5693	6.8895	1872	14.98 %
10	11.9521	5.9062	8.2984	0.7304	8.8020	101	0.81 %
11	10.9613	5.9204	8.1869	0.5837	7.1293	766	6.13 %
12	11.2398	6.5547	8.4147	0.6458	7.6743	359	2.87 %
		Average	7.9567	0.5189	6.3349		
		St Dev	0.4511	0.103676	1.2113		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	6.1225	-4.5222	-0.8304	0.5044	0.4549	0.5646	8.2383	7.4295	9.2219
2	6.0006	-4.7480	-0.9461	0.5318	0.3257	0.5459	8.8626	5.4278	9.0978
3	5.9569	-4.7612	-0.8980	0.5056	0.3876	0.6386	8.4876	6.5074	10.7196
4	6.0029	-3.9225	-0.8728	0.4600	0.5183	0.7502	7.6626	8.6347	12.4968
5	5.8721	-3.7988	0.1011	0.4757	0.6586	0.6152	8.1013	11.2151	10.4773
6	6.2887	-4.7086	0.8033	0.4005	0.4932	0.5621	6.3681	7.8433	8.9382
7	6.4372	-5.1800	0.5623	0.4775	0.4241	0.8375	7.4171	6.5878	13.0110
8	6.7339	-4.9369	1.6814	0.4531	0.5719	0.7557	6.7283	8.4928	11.2219
9	6.5389	-4.6992	0.9786	0.7072	0.9712	1.1638	10.8152	14.8525	17.7983
10	6.7433	-4.5411	-0.5019	0.7984	0.8876	1.2748	11.8393	13.1624	18.9046
11	6.2786	-5.0697	-0.1768	0.6370	0.5502	1.2264	10.1450	8.7635	19.5332
12	6.4529	-5.2162	-0.3043	0.6622	0.6179	1.2094	10.2626	9.5754	18.7427

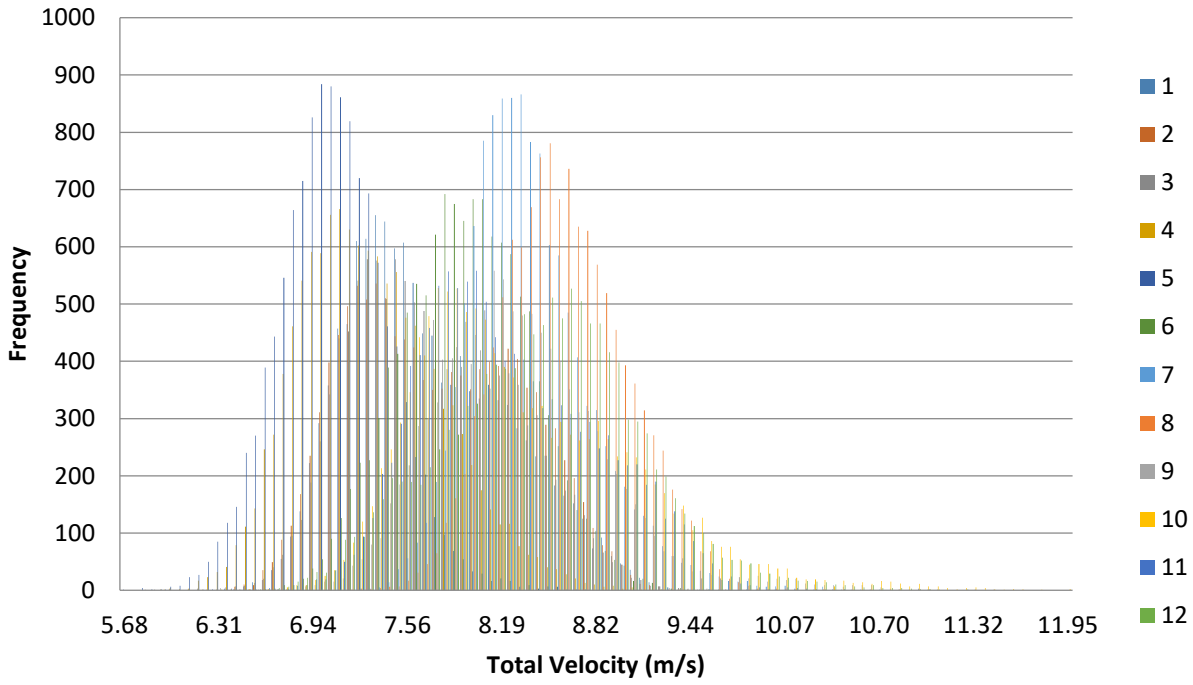


Figure 1. Velocity histogram for each interval (100 bins).

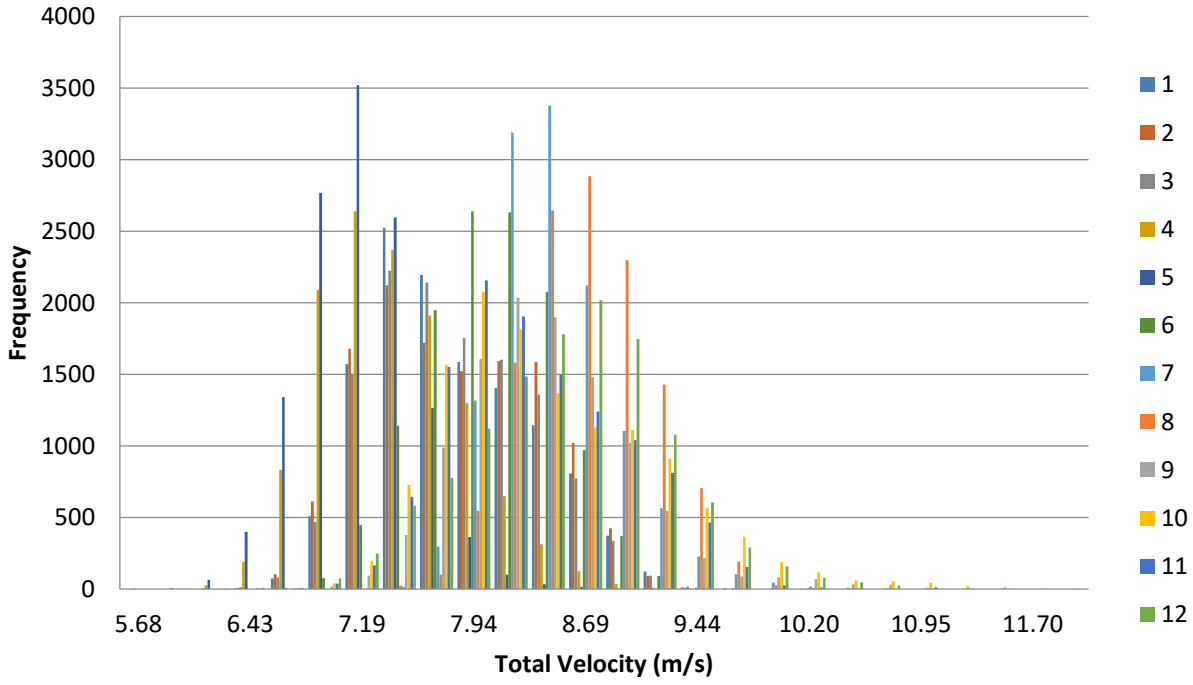
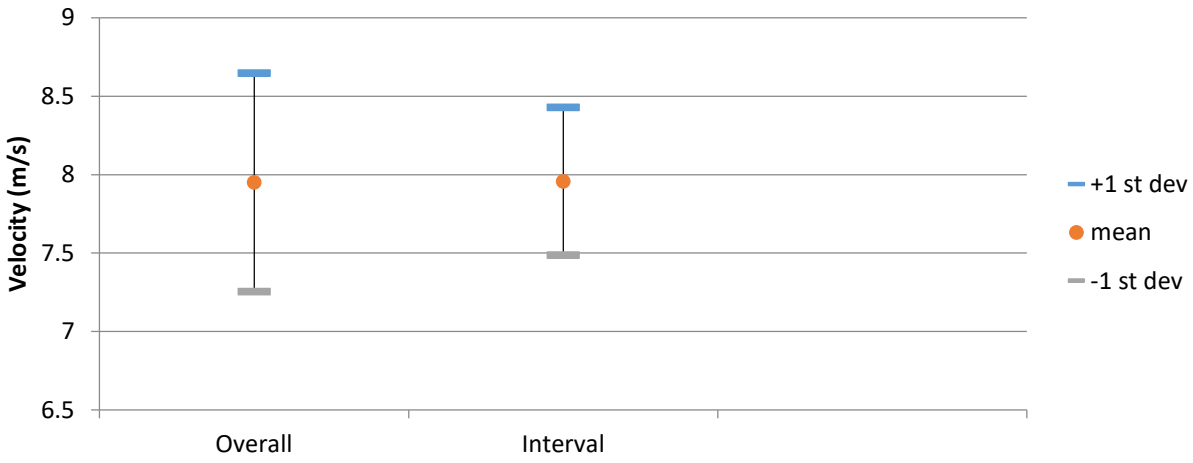
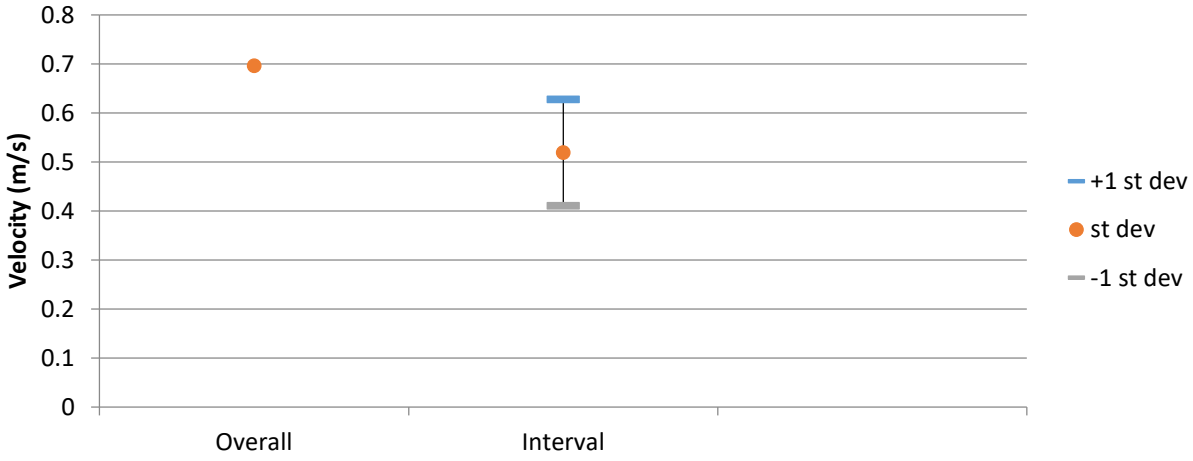


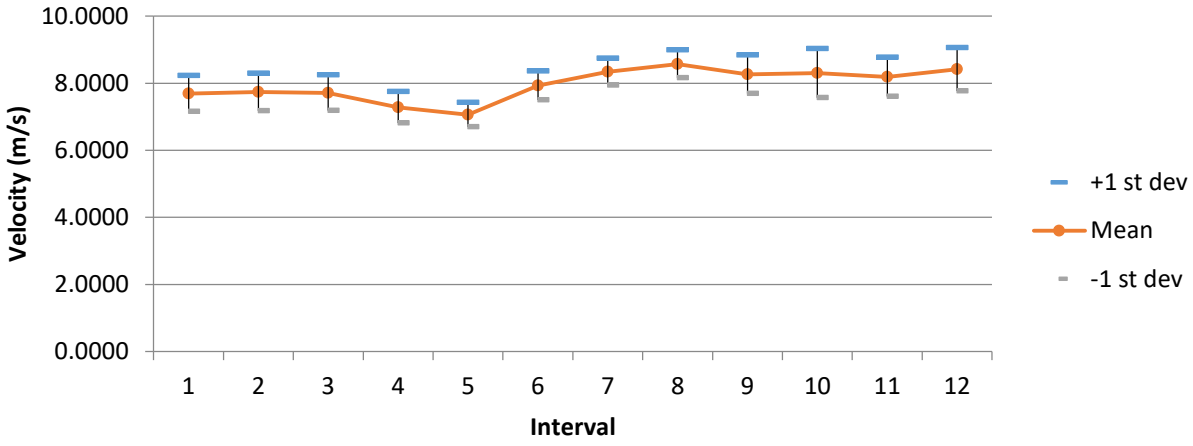
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 160
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: A2
First Sample Date: 19-Aug-13 First Sample Time: 09:48:38.468

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.1200	11.2889	8.5873	0.6282
u	3.4300	9.2500	6.3767	0.7398
v	-7.5800	-2.7200	-5.2077	0.6050
w	-4.9200	1.7500	-2.1822	0.8234

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)	# Zero Values	% Zero Values
1	10.2031	7.0425	8.6124	0.4855	5.6369	217	1.74 %
2	10.5093	6.4324	8.9212	0.6536	7.3266	762	6.10 %
3	10.9432	6.7763	9.0887	0.5988	6.5886	368	2.94 %
4	10.2966	7.1528	8.7014	0.6420	7.3782	323	2.58 %
5	9.7919	6.5347	8.3729	0.4494	5.3673	460	3.68 %
6	10.6225	6.8969	8.5020	0.6031	7.0941	480	3.84 %
7	10.3228	6.2478	8.2172	0.5135	6.2495	1686	13.49 %
8	10.0753	6.9469	8.3684	0.4590	5.4844	88	0.70 %
9	10.1738	6.6050	8.5489	0.5783	6.7648	587	4.70 %
10	10.6891	6.6432	8.2218	0.4834	5.8793	418	3.34 %
11	11.1796	5.1200	8.8004	0.7194	8.1752	1738	13.90 %
12	11.2889	6.0568	8.6999	0.6300	7.2418	1907	15.26 %
		Average	8.5879	0.5680	6.3770		
		St Dev	0.2594	0.084052	0.7240		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	6.5418	-5.0155	-2.3445	0.6307	0.5041	0.5568	9.6404	7.7054	8.5117
2	6.6376	-5.5818	-1.7804	0.7707	0.5441	0.8607	11.6108	8.1971	12.9673
3	6.6783	-5.9044	-1.5417	0.6154	0.3825	0.7742	9.2151	5.7274	11.5927
4	6.4505	-5.2390	-2.4486	0.7860	0.4506	0.5039	12.1852	6.9860	7.8114
5	6.1997	-5.0180	-2.4543	0.6238	0.3720	0.3739	10.0622	6.0000	6.0306
6	6.4188	-4.9183	-2.4084	0.7727	0.6459	0.6663	12.0381	10.0628	10.3810
7	5.8713	-4.9733	-2.7119	0.6231	0.5720	0.7145	10.6128	9.7416	12.1686
8	6.3172	-4.8255	-2.3406	0.6558	0.4174	0.9820	10.3819	6.6078	15.5452
9	6.2956	-5.4035	-1.7752	0.6542	0.4381	0.9029	10.3906	6.9583	14.3421
10	6.0169	-4.8136	-2.7354	0.6785	0.4192	0.5825	11.2761	6.9673	9.6804
11	6.7096	-5.2927	-1.8389	0.8833	0.5838	0.6557	13.1642	8.7011	9.7729
12	6.3672	-5.5561	-1.7497	0.6430	0.6699	0.8663	10.0982	10.5213	13.6052

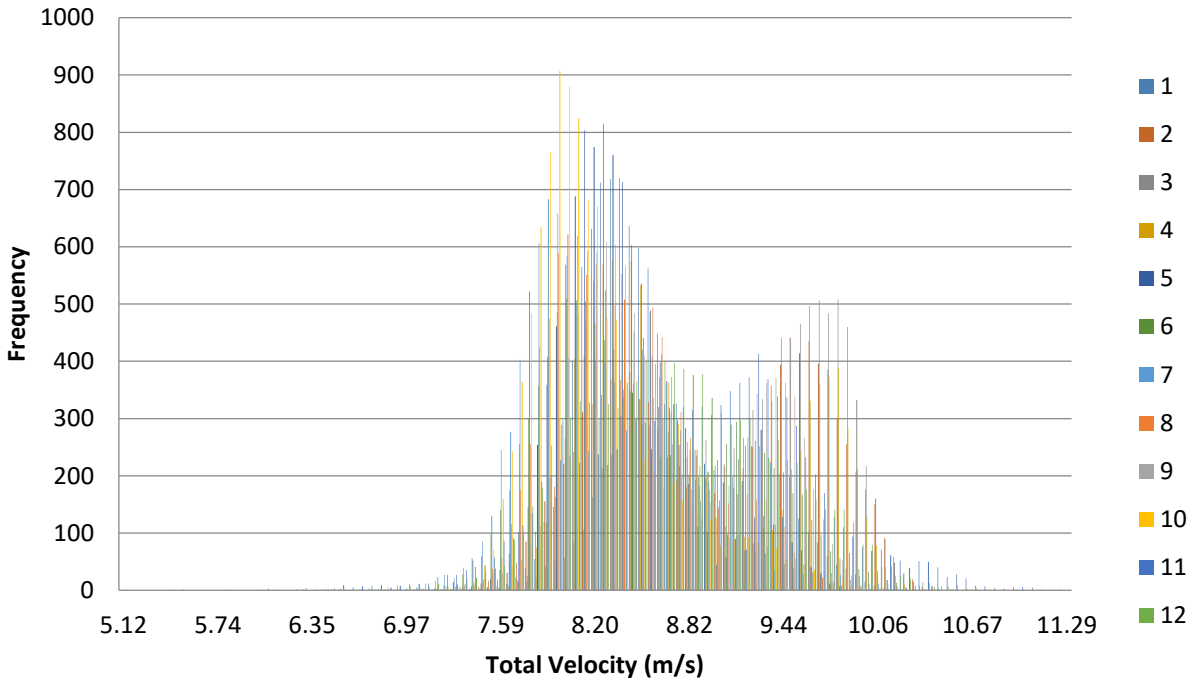


Figure 1. Velocity histogram for each interval (100 bins).

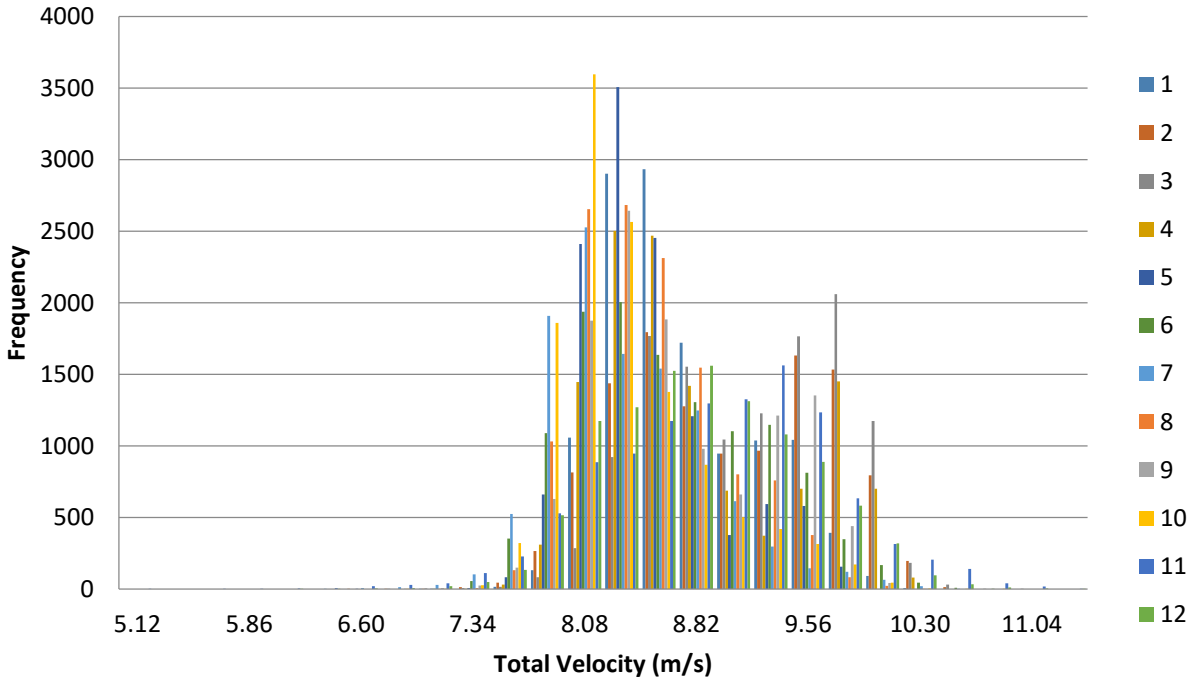
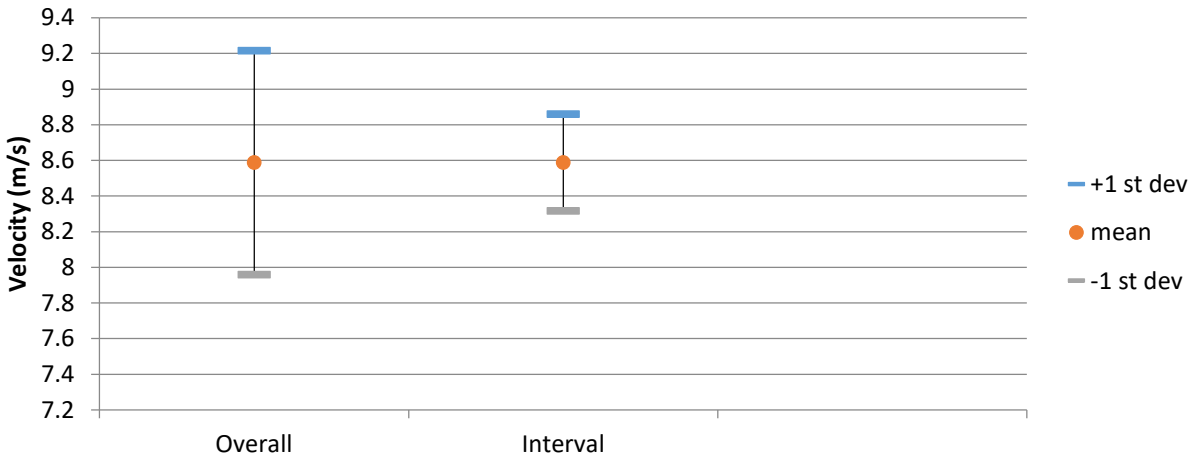
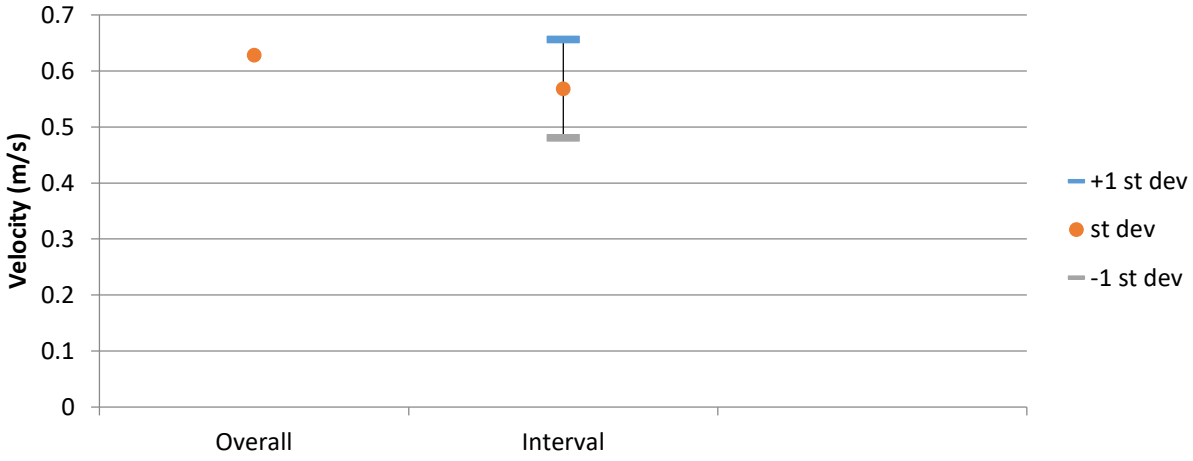


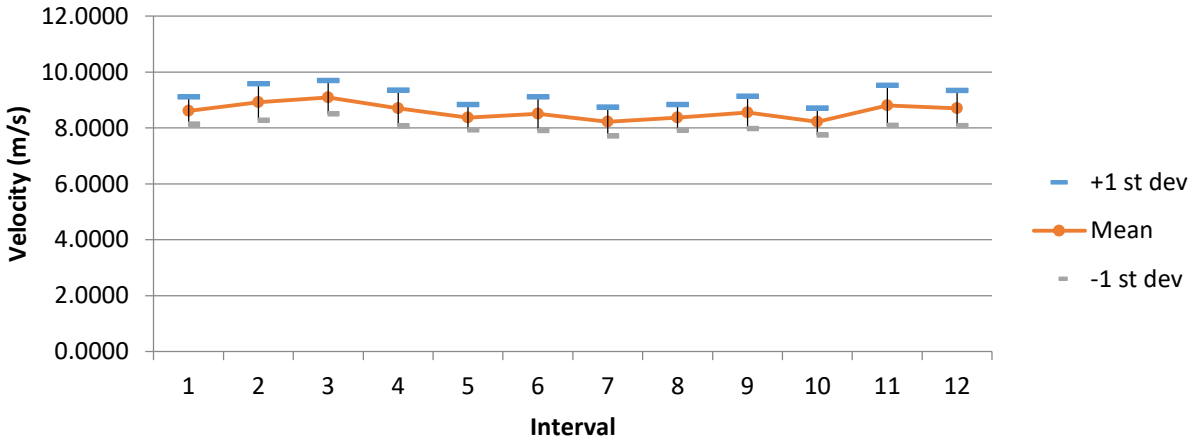
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 161
Blockage Condition: Existing buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: A4
First Sample Date: 19-Aug-13 First Sample Time: 09:51:24.296

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.9511	10.8348	8.4342	0.5822
u	4.0000	8.4400	6.3643	0.5762
v	-7.5200	-2.2200	-5.3734	0.5921
w	-3.8800	3.6100	-0.5876	1.0338

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)	# Zero Values	% Zero Values
1	9.9799	6.5598	7.8264	0.3700	4.7273	33	0.26 %
2	10.2476	6.9320	8.5790	0.5510	6.4226	117	0.94 %
3	10.2252	5.9511	8.5938	0.5082	5.9131	509	4.07 %
4	10.1267	6.2669	7.9164	0.5113	6.4588	446	3.57 %
5	10.2076	6.0104	8.2268	0.4692	5.7035	943	7.54 %
6	10.6895	6.7101	8.6427	0.4752	5.4983	831	6.65 %
7	10.4370	7.0924	8.5980	0.5022	5.8413	81	0.65 %
8	10.7371	5.9766	8.7162	0.5844	6.7049	1615	12.92 %
9	10.1808	6.6590	8.3659	0.5186	6.1985	1422	11.38 %
10	10.8348	6.3360	8.3055	0.4418	5.3199	2324	18.59 %
11	10.2327	7.4674	8.6131	0.4707	5.4652	432	3.46 %
12	10.4953	6.6409	8.8398	0.5123	5.7949	470	3.76 %
		Average	8.4353	0.4929	5.8788		
		St Dev	0.3020	0.052061	0.5686		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	6.0969	-4.8470	-0.0866	0.4727	0.3784	0.5920	7.7535	6.2069	9.7101
2	6.4900	-5.4350	-1.1526	0.5622	0.4406	0.6367	8.6622	6.7889	9.8105
3	6.5093	-5.3567	-1.2682	0.6044	0.5193	0.8956	9.2846	7.9779	13.7582
4	6.1114	-4.8996	-0.2535	0.5324	0.5969	0.9335	8.7117	9.7669	15.2751
5	6.2869	-5.1982	0.0181	0.5747	0.6962	0.7345	9.1412	11.0731	11.6832
6	6.5849	-5.4496	-0.5325	0.5476	0.5108	1.0094	8.3164	7.7577	15.3290
7	6.6900	-5.2475	-0.6106	0.6076	0.5702	0.9040	9.0815	8.5239	13.5130
8	6.4595	-5.6589	-0.7643	0.5472	0.4991	1.1972	8.4715	7.7264	18.5344
9	6.1088	-5.5149	0.0725	0.4691	0.5901	1.3969	7.6787	9.6604	22.8677
10	6.1019	-5.5343	0.0084	0.4822	0.5374	0.8908	7.9021	8.8070	14.5990
11	6.3718	-5.6925	-0.7712	0.4746	0.4269	0.6334	7.4479	6.7004	9.9407
12	6.5092	-5.7260	-1.5600	0.5565	0.4402	0.5574	8.5491	6.7626	8.5626

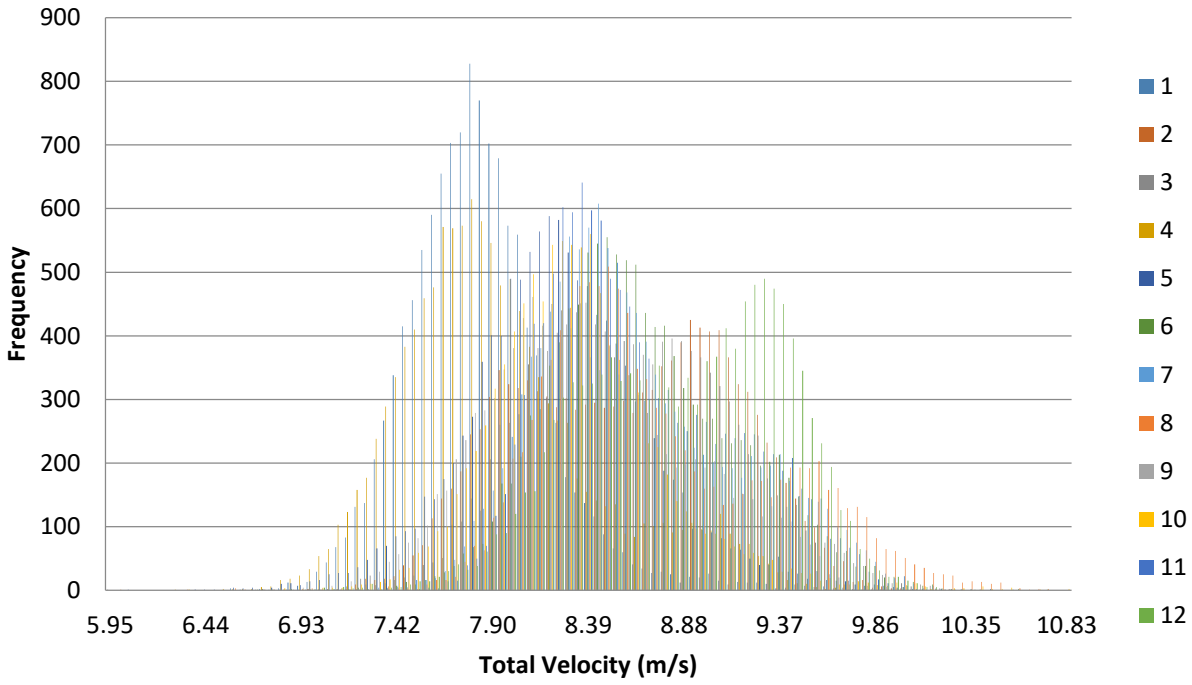


Figure 1. Velocity histogram for each interval (100 bins).

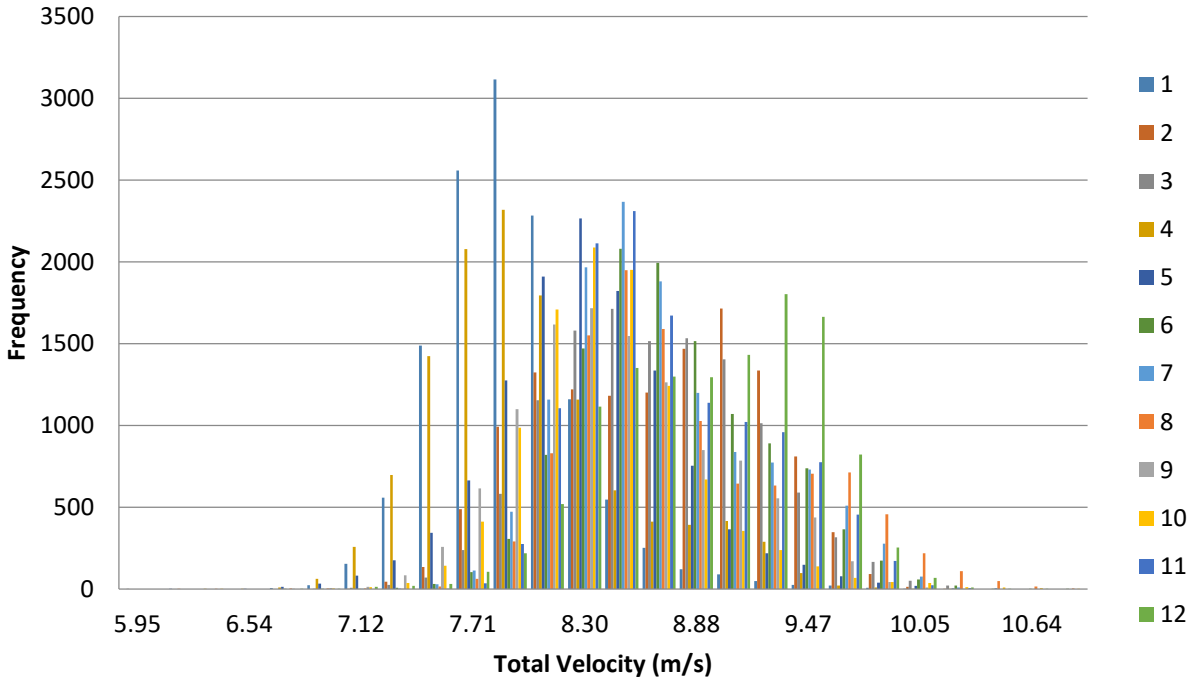
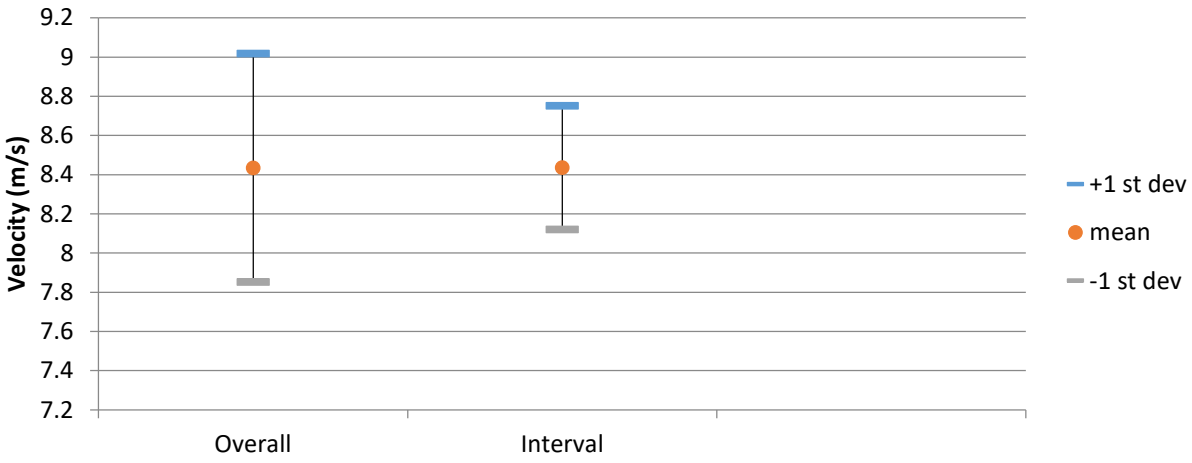
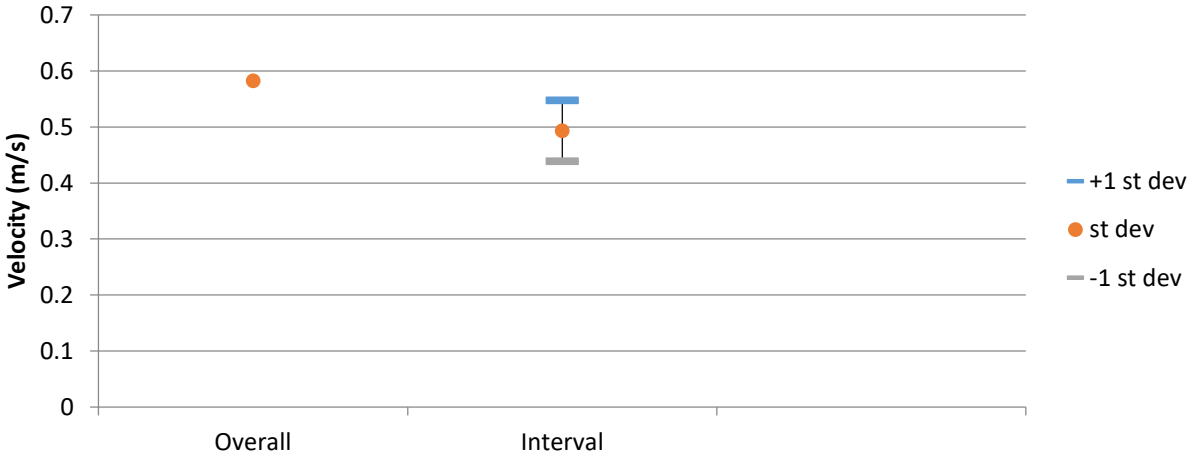


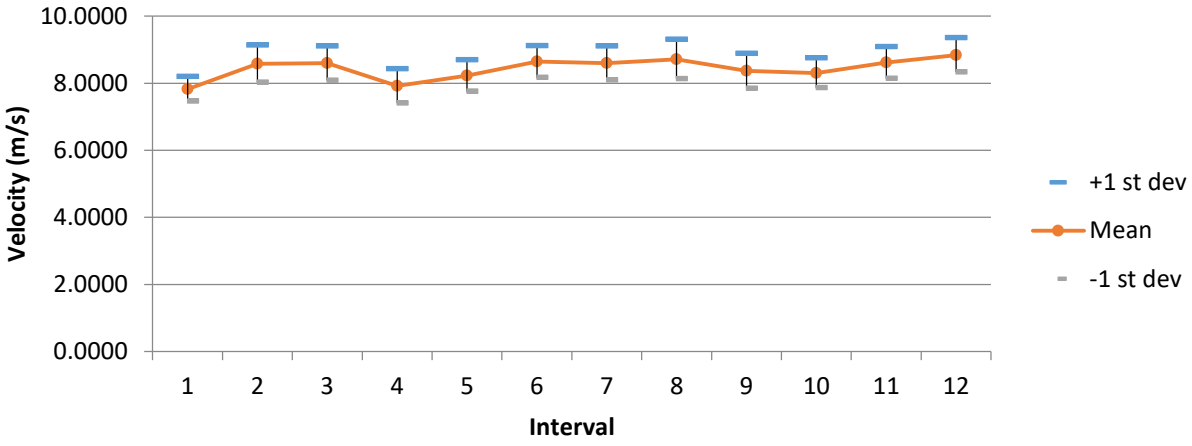
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 162
Blockage Condition: Existing buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: A5
First Sample Date: 19-Aug-13
First Sample Time: 09:54:08.343

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.2100	6.3961	8.2462	0.5394
u	8.5400	4.3300	6.1580	0.4671
v	-2.4800	-7.5300	-5.3869	0.7873
w	2.6100	-2.7400	-0.1240	0.7058

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	9.6961	6.4809	7.8984	0.3909	4.9487	1032	8.26 %
2	9.9181	6.4409	7.7643	0.3979	5.1248	50	0.40 %
3	9.8076	6.4672	7.7240	0.3212	4.1579	0	0.00 %
4	10.4328	6.3961	8.2955	0.4897	5.9035	404	3.23 %
5	10.3108	6.8231	8.2861	0.4962	5.9881	269	2.15 %
6	10.3892	7.1579	8.2467	0.3953	4.7933	1445	11.56 %
7	9.8918	6.7645	8.3124	0.3509	4.2210	506	4.05 %
8	10.3808	8.0983	8.7281	0.2415	2.7675	1520	12.16 %
9	10.3198	7.1532	8.7643	0.3258	3.7175	1984	15.87 %
10	11.2100	6.9605	8.7502	0.4386	5.0122	1713	13.70 %
		Average	8.2770	0.3848	4.6634		
		St dev	0.3714	0.0747	0.9309		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	6.2360	-4.7271	0.1479	0.5478	0.6759	0.7259	8.7838	10.8381	11.6408
2	6.0910	-4.7430	0.2158	0.4389	0.4186	0.6566	7.2059	6.8728	10.7799
3	6.2981	-4.3882	0.1590	0.4309	0.5108	0.6072	6.8415	8.1106	9.6415
4	6.2838	-5.2987	-0.3416	0.7041	0.5262	0.7770	11.2044	8.3734	12.3653
5	6.0856	-5.5603	-0.4234	0.4178	0.4836	0.6047	6.8651	7.9474	9.9374
6	6.0096	-5.5855	-0.0535	0.3894	0.4449	0.7065	6.4793	7.4025	11.7566
7	6.1540	-5.5038	0.3048	0.4012	0.6380	0.6286	6.5200	10.3665	10.2143
8	6.0120	-6.3097	-0.2881	0.2042	0.2142	0.3318	3.3972	3.5632	5.5192
9	6.0836	-6.2706	-0.4653	0.2773	0.2509	0.4809	4.5576	4.1248	7.9041
10	6.2940	-5.9940	-0.6885	0.4893	0.3941	0.5887	7.7736	6.2612	9.3537

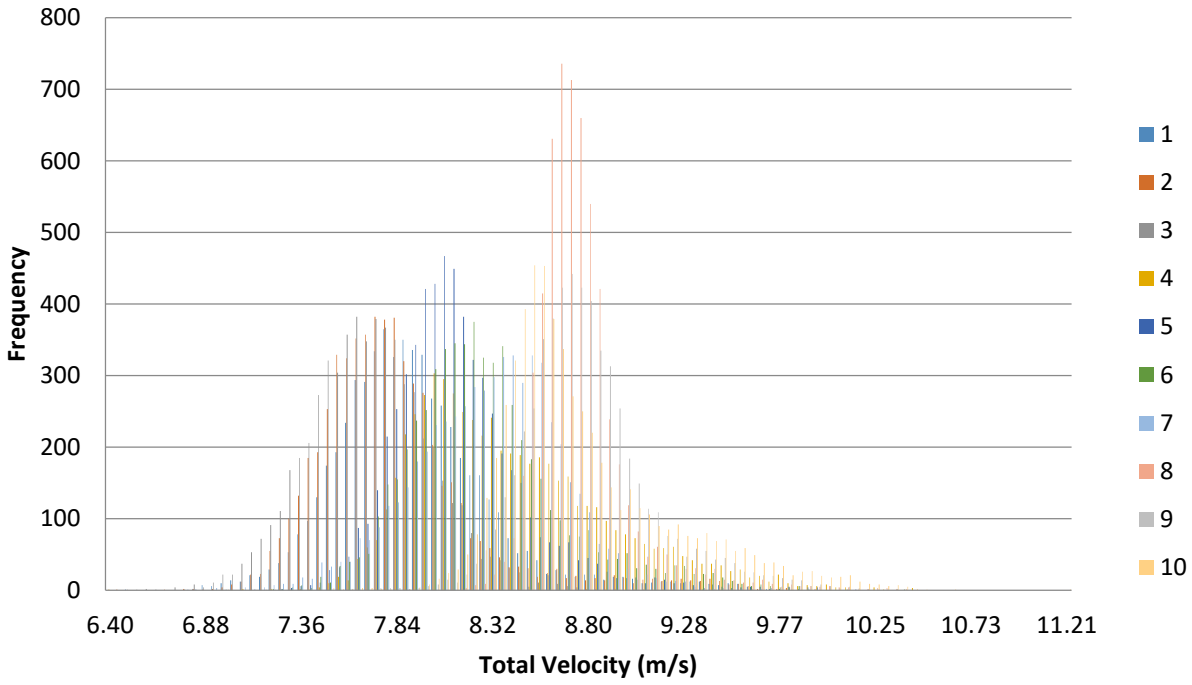


Figure 1. Velocity histogram for each interval (100 bins).

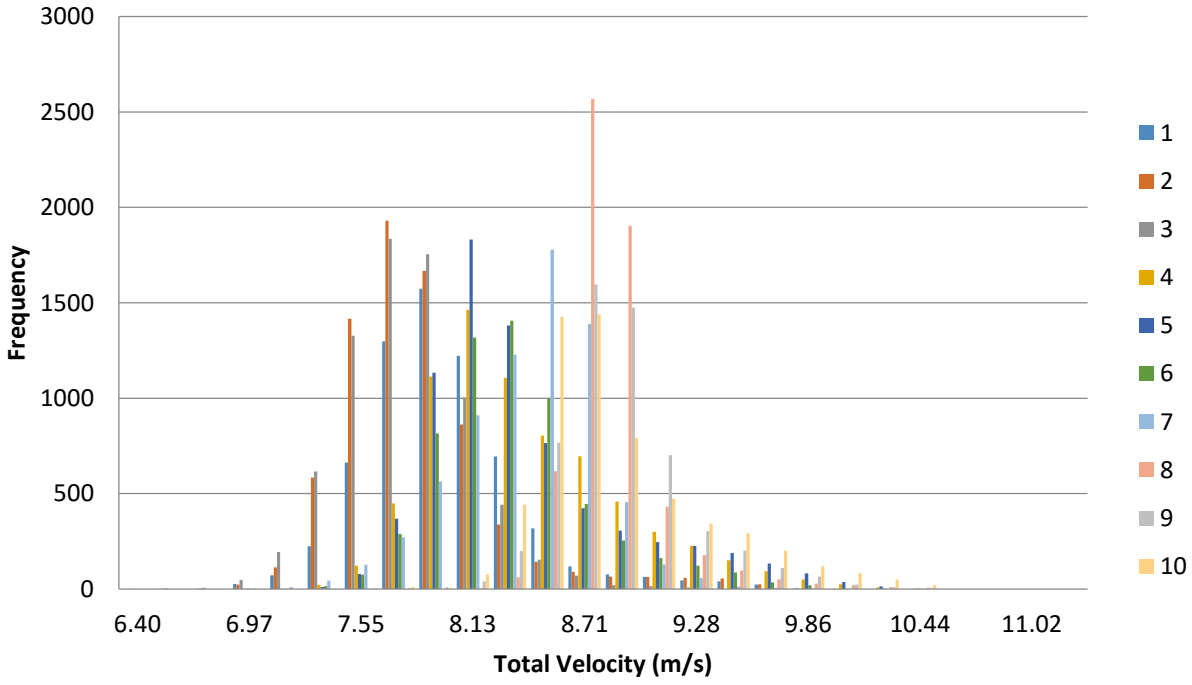
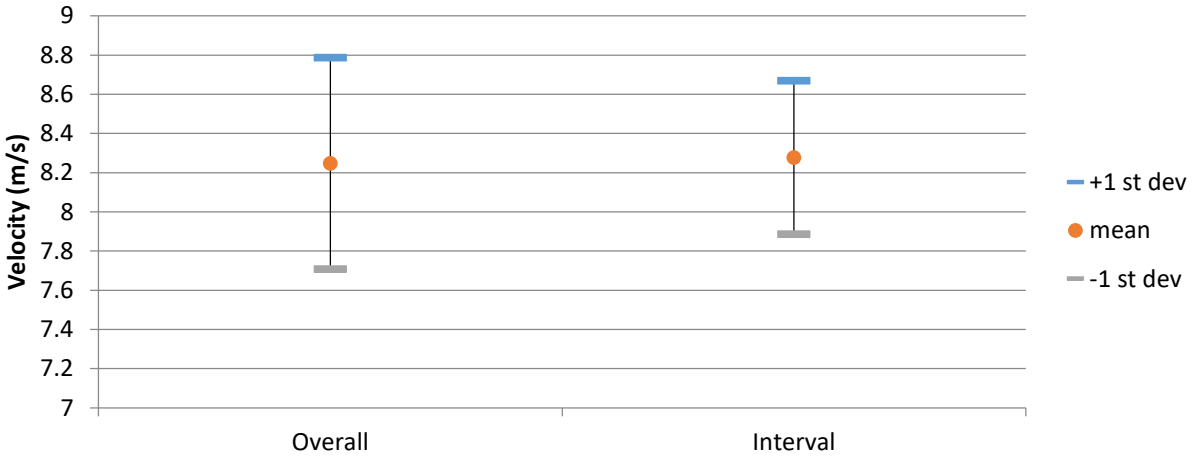
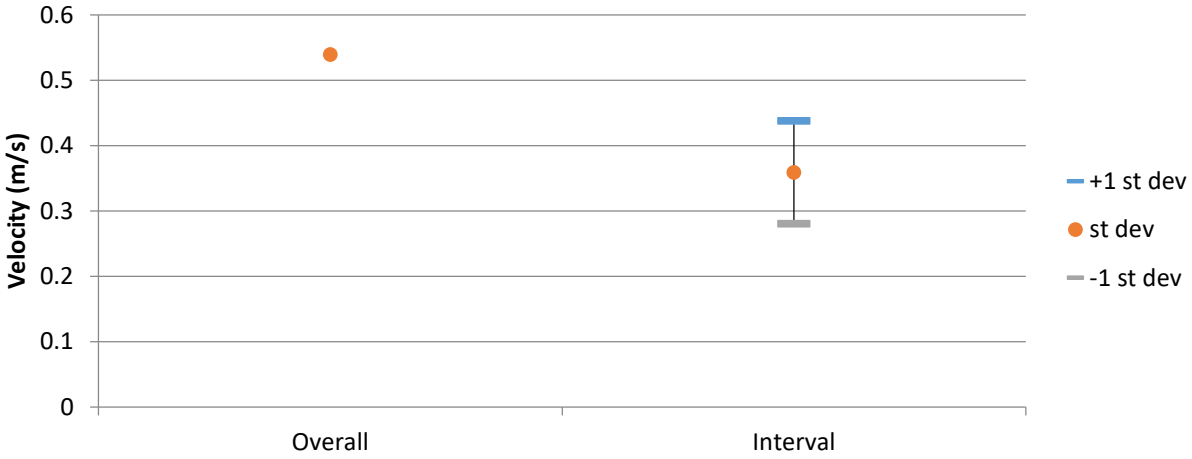


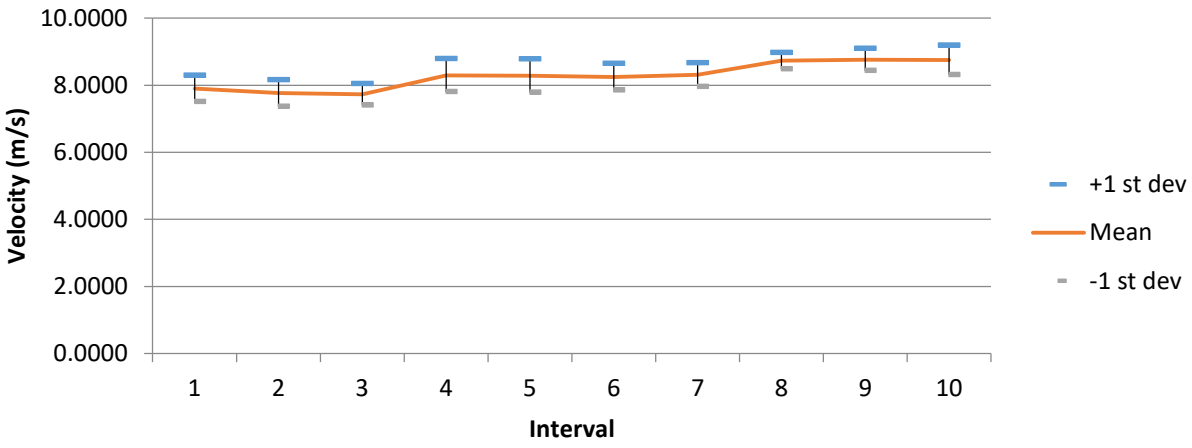
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 163
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: G5
First Sample Date: 19-Aug-13 First Sample Time: 09:58:11.000

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	8.8614	11.3898	9.7514	0.2587
u	7.7700	10.0000	8.9114	0.2170
v	1.3900	6.8100	3.6899	0.6633
w	-2.6700	0.3560	-1.2348	0.3413

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	10.9975	9.0763	9.7393	0.2356	2.4186
2	10.5886	8.9103	9.5623	0.1814	1.8967
3	11.3898	9.1356	9.7020	0.2712	2.7955
4	10.1909	8.9897	9.6127	0.1621	1.6859
5	11.2187	9.2850	10.0645	0.2216	2.2016
6	10.9865	9.0506	9.9120	0.3084	3.1116
7	10.2677	9.0663	9.6379	0.1587	1.6470
8	10.6330	9.2653	9.8118	0.1592	1.6229
9	11.0434	9.2732	9.8872	0.1963	1.9850
10	11.2503	9.1464	9.8855	0.2047	2.0711
11	10.3971	9.0293	9.6358	0.1694	1.7578
12	10.1758	8.8614	9.5658	0.1690	1.7671
		Average	9.7514	0.2031	2.0801
		St Dev	0.1602	0.0482	0.4566

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.8942	3.6622	-1.3186	0.2151	0.6658	0.4043	2.4179	7.4855	4.5455
2	8.8861	3.2878	-1.1274	0.2334	0.4552	0.4067	2.6265	5.1227	4.5771
3	8.8278	3.7423	-1.3373	0.2031	0.5812	0.3153	2.3004	6.5838	3.5720
4	8.9126	3.3769	-1.1032	0.2300	0.4483	0.3478	2.5805	5.0303	3.9018
5	8.9833	4.3047	-1.3003	0.1612	0.5709	0.2673	1.7943	6.3547	2.9755
6	8.9639	3.9494	-1.3672	0.1794	0.6293	0.3115	2.0018	7.0200	3.4751
7	8.9284	3.4258	-1.0605	0.2252	0.4861	0.2211	2.5221	5.4439	2.4766
8	8.9241	3.8286	-1.2948	0.1895	0.4810	0.2331	2.1238	5.3896	2.6116
9	8.8343	4.2205	-1.2916	0.1650	0.4076	0.2750	1.8672	4.6140	3.1126
10	8.8309	4.2316	-1.2596	0.1745	0.4024	0.3065	1.9764	4.5565	3.4703
11	8.8795	3.5026	-1.1810	0.2471	0.3956	0.3896	2.7833	4.4555	4.3874
12	9.0713	2.7472	-1.1757	0.2258	0.3462	0.3789	2.4889	3.8165	4.1774

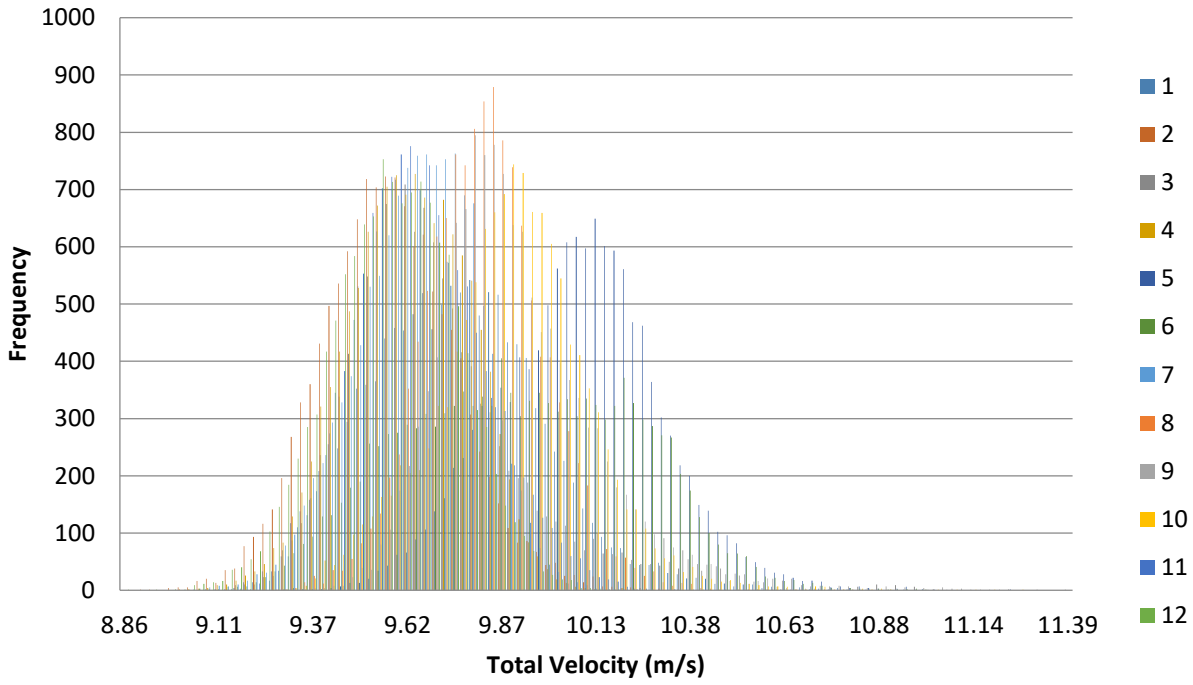


Figure 1. Velocity histogram for each interval (100 bins).

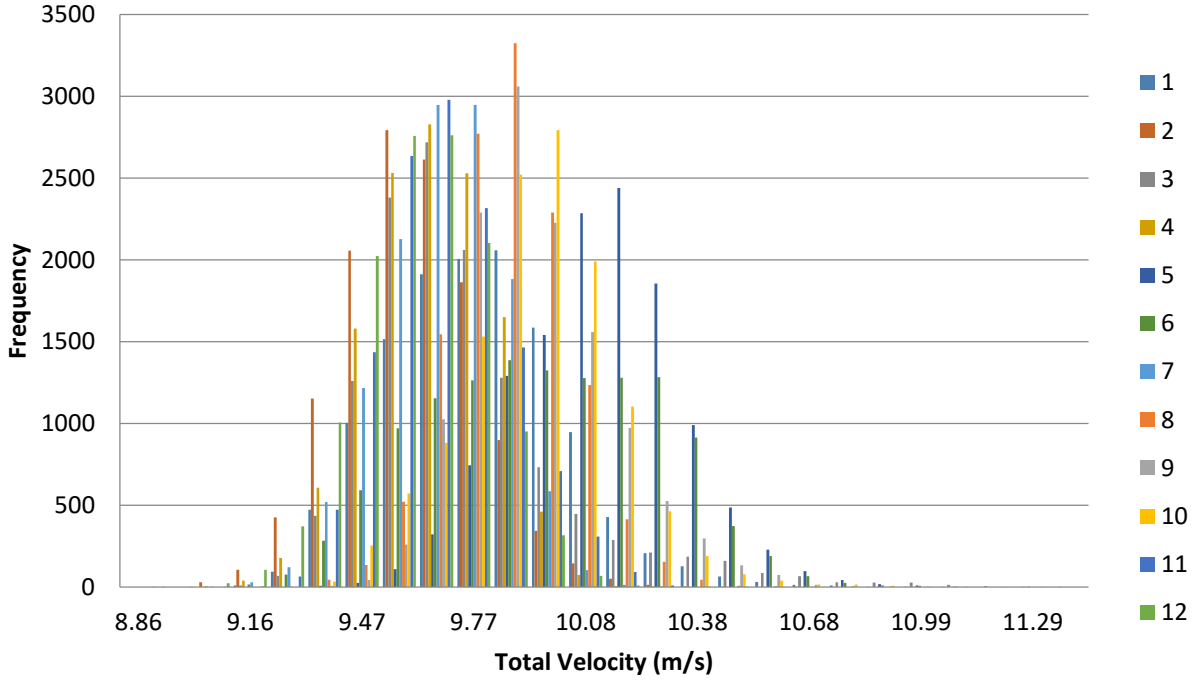
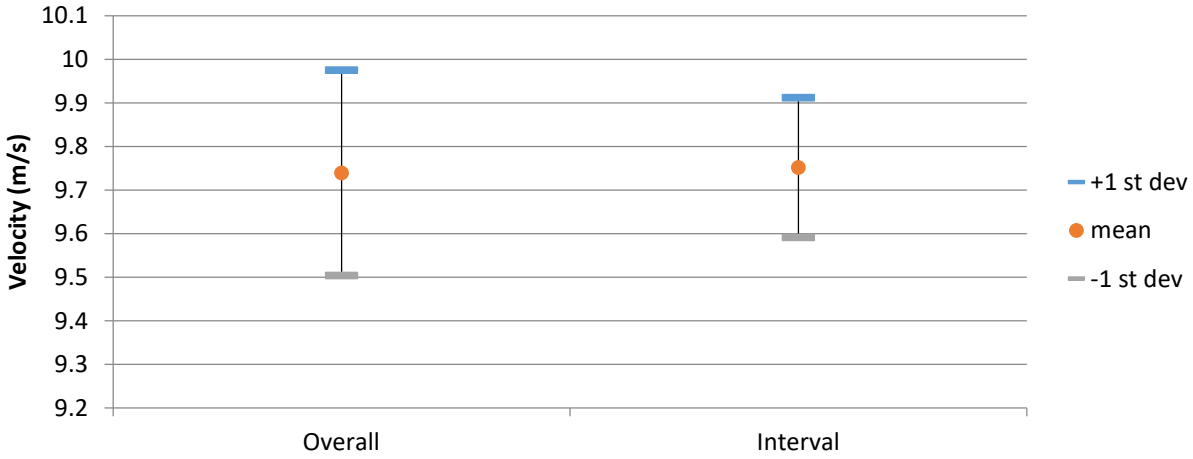
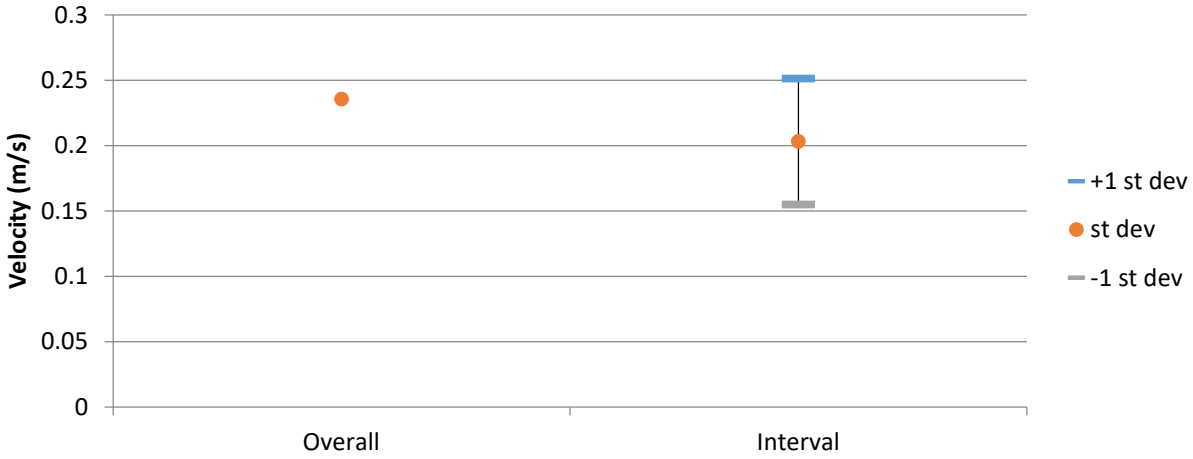


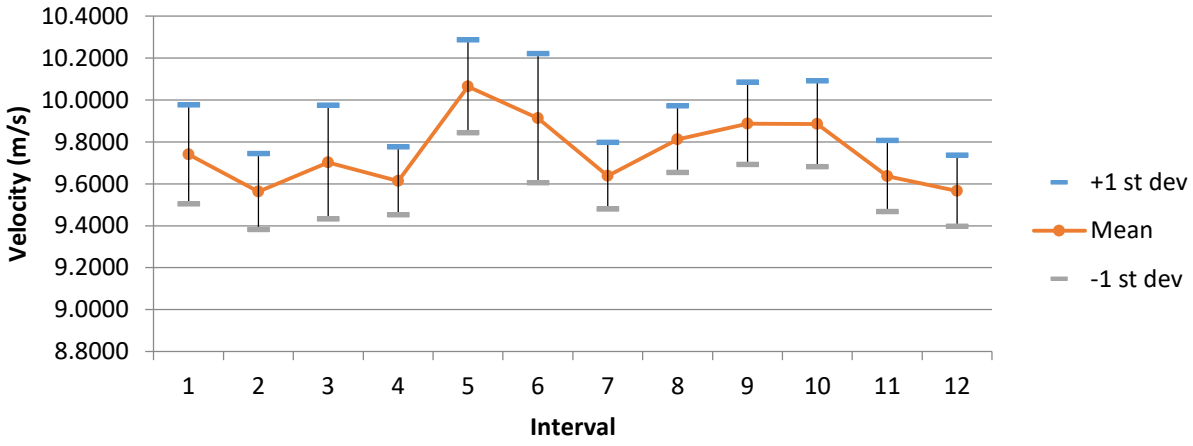
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 164
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: G4
First Sample Date: 19-Aug-13 First Sample Time: 10:00:48.312

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	8.6091	13.6584	10.3431	0.5558
u	6.8400	10.5000	8.9992	0.3292
v	1.1300	9.5700	4.6056	0.9606
w	-6.2700	1.4400	-1.8974	0.6773

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)	# Zero Values	% Zero Values
1	13.1816	10.0319	10.7580	0.3407	3.1671	0	0.00 %
2	13.0956	9.8237	10.7410	0.4050	3.7709	0	0.00 %
3	11.9628	9.5534	10.2990	0.2787	2.7058	0	0.00 %
4	12.3359	8.6091	10.1132	0.4202	4.1549	0	0.00 %
5	11.9590	9.2025	9.8554	0.2883	2.9249	0	0.00 %
6	12.4453	9.5644	10.0906	0.2856	2.8308	0	0.00 %
7	13.5663	9.6173	10.7589	0.4868	4.5250	0	0.00 %
8	13.1704	9.2655	10.5969	0.4814	4.5425	4	0.03 %
9	13.6584	8.6408	10.6804	0.6930	6.4883	45	0.36 %
10	13.2389	8.6823	10.0006	0.4816	4.8158	0	0.00 %
11	12.5252	8.6600	9.9519	0.4208	4.2283	0	0.00 %
12	12.9988	9.0370	10.2716	0.5806	5.6529	0	0.00 %
		Average	10.3431	0.4302	3.9926		
		St Dev	0.3308	0.120067	1.1133		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.2870	5.0090	-1.9771	0.1572	0.7071	0.2807	1.6932	7.6140	3.0221
2	9.1969	5.1098	-2.0245	0.1811	0.7601	0.3627	1.9692	8.2651	3.9438
3	9.0872	4.4853	-1.7086	0.2027	0.6281	0.3132	2.2309	6.9115	3.4471
4	9.0214	4.2014	-1.4964	0.2952	0.8452	0.6126	3.2719	9.3690	6.7909
5	8.8830	3.9289	-1.4919	0.2672	0.5895	0.4725	3.0081	6.6358	5.3193
6	8.9949	4.1677	-1.7601	0.2298	0.6281	0.2810	2.5543	6.9831	3.1244
7	9.1797	5.1614	-2.0295	0.2014	0.8460	0.4568	2.1944	9.2156	4.9758
8	9.1158	4.8153	-2.2537	0.2233	0.9258	0.5048	2.4491	10.1560	5.5373
9	8.7804	5.2275	-2.7832	0.5183	1.2170	0.7962	5.9030	13.8608	9.0682
10	8.8945	4.1726	-1.3273	0.3803	0.9508	0.9551	4.2753	10.6894	10.7379
11	8.7708	4.2653	-1.6962	0.3087	0.8333	0.6564	3.5195	9.5010	7.4835
12	8.7783	4.7251	-2.2232	0.2067	1.0930	0.5283	2.3545	12.4512	6.0184

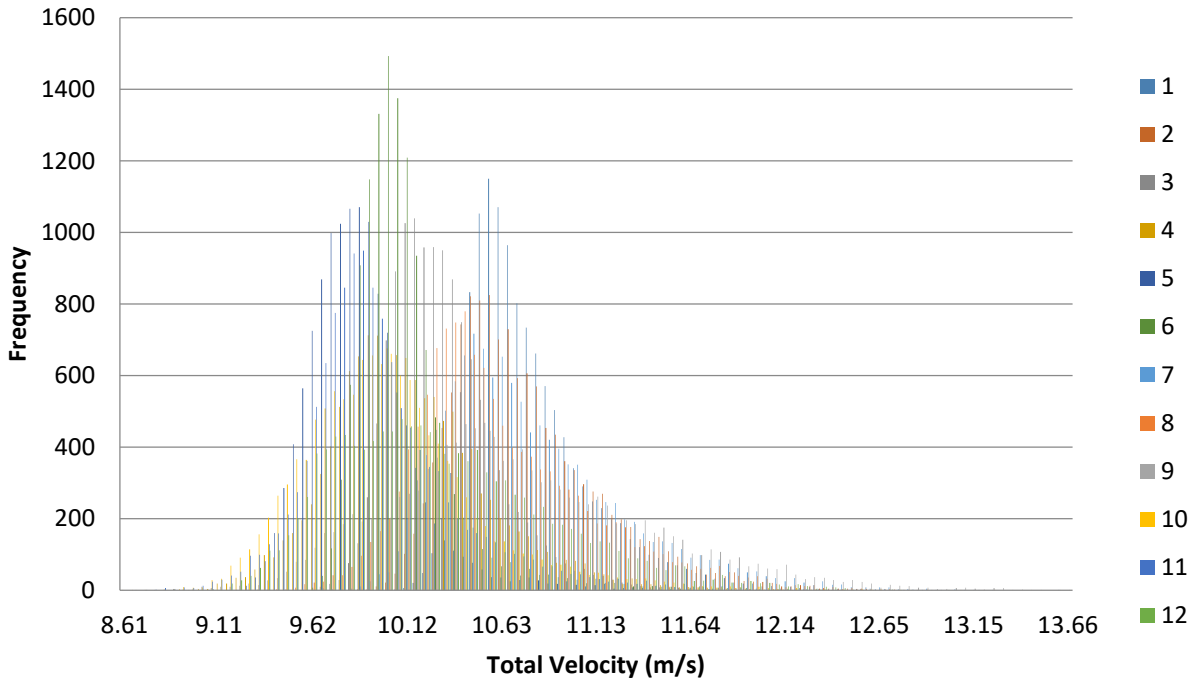


Figure 1. Velocity histogram for each interval (100 bins).

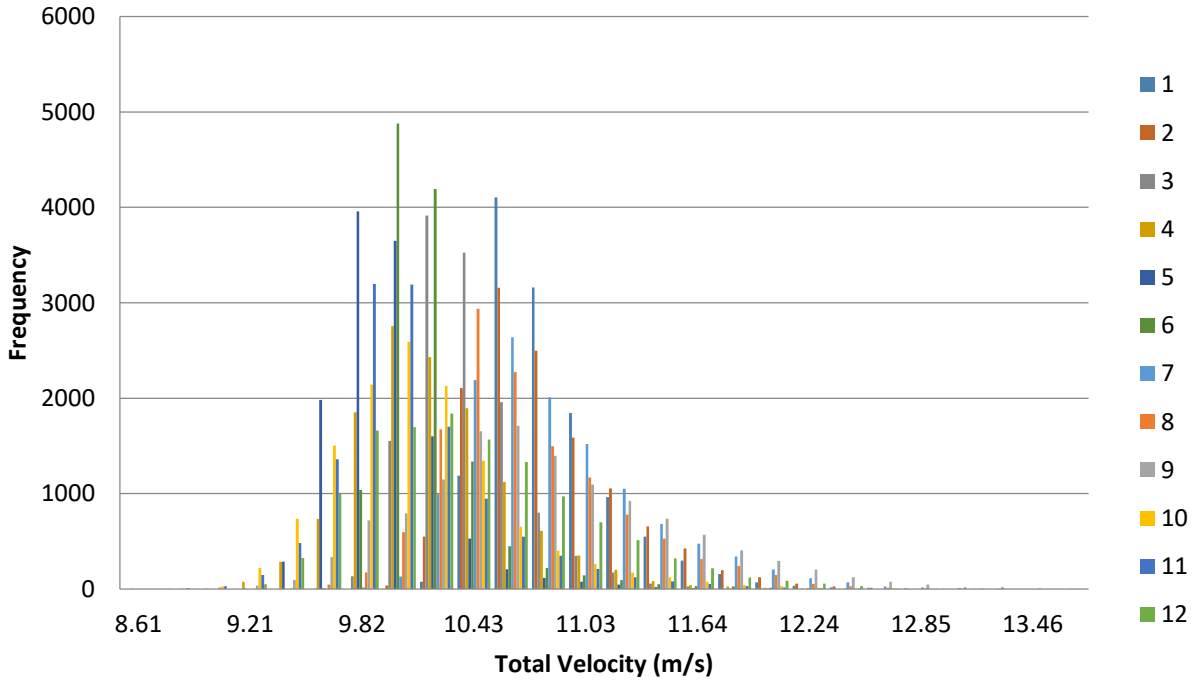
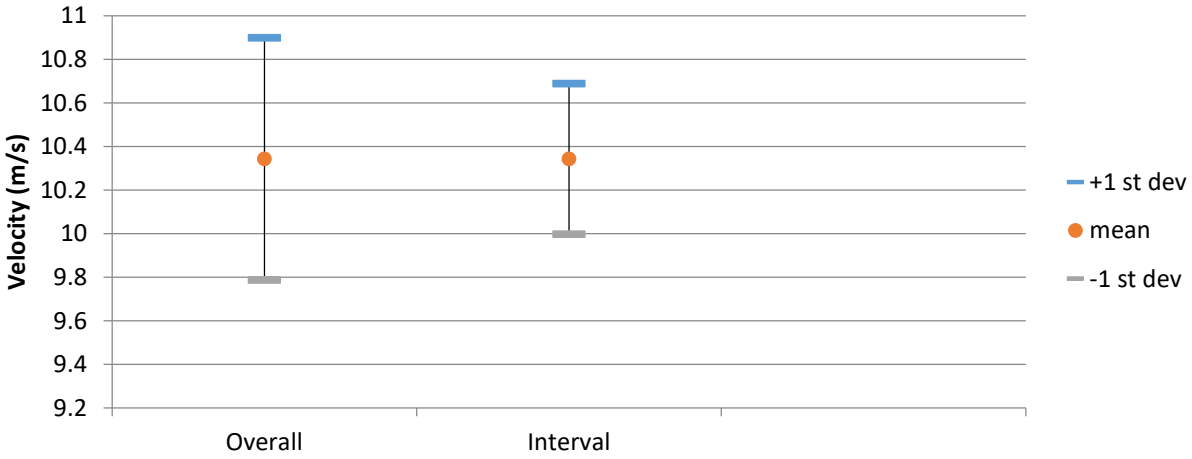
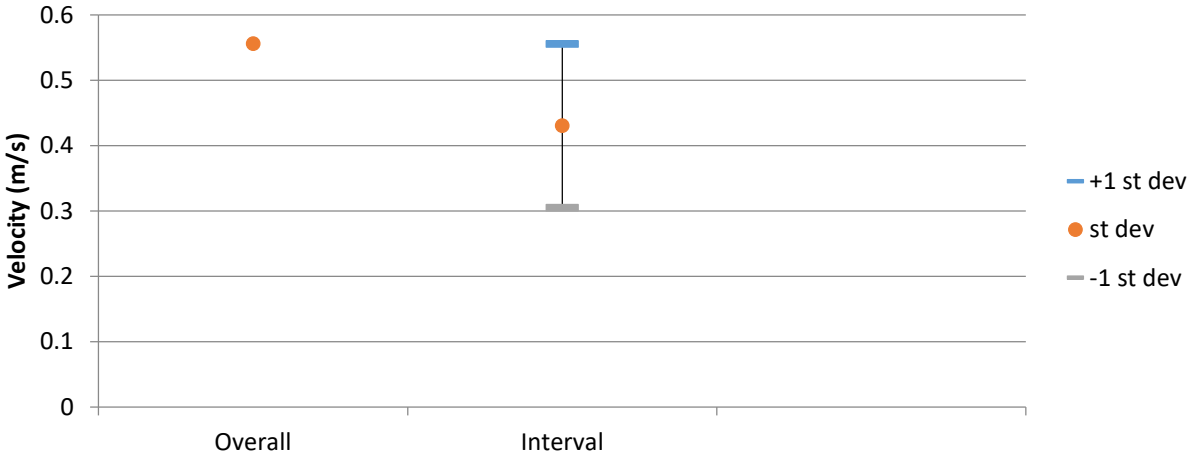


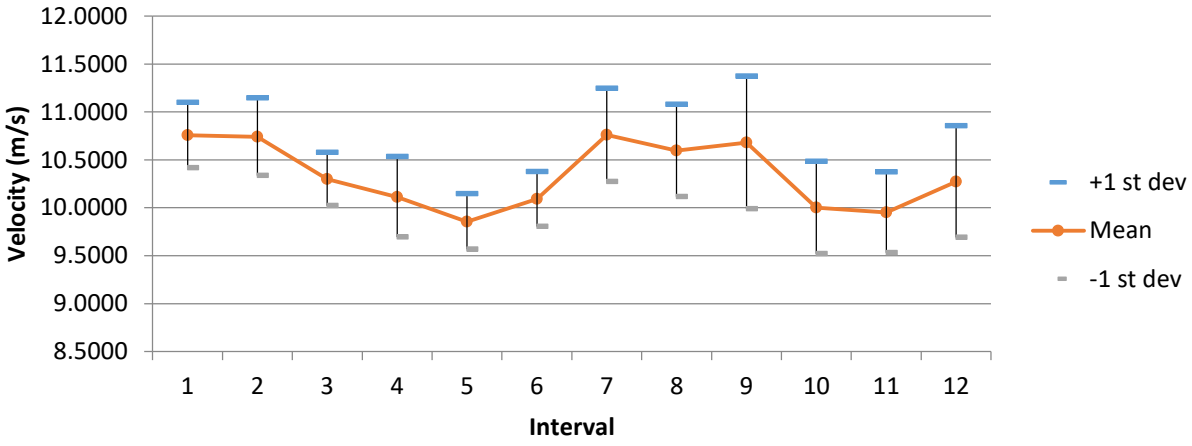
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 165
Blockage Condition: Existing buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: G2
First Sample Date: 19-Aug-13 First Sample Time: 10:03:42.218

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	9.7259	13.1662	10.7474	0.3839
u	7.9300	11.3000	9.4317	0.4757
v	-0.3530	7.6600	2.9024	1.0376
w	-6.0100	-1.1200	-4.0822	0.5544

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	12.5574	10.2061	10.8836	0.2955	2.7147
2	12.5974	10.0982	10.7025	0.3905	3.6486
3	12.8568	9.8797	10.5544	0.2975	2.8187
4	11.4852	10.0147	10.6041	0.1785	1.6833
5	11.3993	10.0622	10.6544	0.1754	1.6459
6	12.5292	10.1795	11.0472	0.2977	2.6947
7	12.9578	9.7259	10.9148	0.3947	3.6160
8	12.8298	9.8308	10.6851	0.3121	2.9212
9	13.1635	10.2333	11.0306	0.4548	4.1229
10	13.1662	10.1849	11.0132	0.4866	4.4183
11	11.3898	9.8443	10.3868	0.1491	1.4356
12	11.5139	10.1406	10.4924	0.1259	1.2001
		Average	10.7474	0.2965	2.7433
		St Dev	0.2246	0.1204	1.0308

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.4992	3.5418	-3.8617	0.3474	0.7717	0.3650	3.6568	8.1236	3.8428
2	9.2514	3.0787	-4.2577	0.3864	1.0234	0.5522	4.1768	11.0616	5.9683
3	9.1680	2.8107	-4.2991	0.3613	0.8296	0.4797	3.9409	9.0487	5.2320
4	9.3715	2.4094	-4.2669	0.4017	0.4131	0.5567	4.2862	4.4077	5.9404
5	9.4820	1.9231	-4.4013	0.3585	0.5501	0.3718	3.7809	5.8013	3.9207
6	10.0091	2.5480	-3.7476	0.4255	1.0200	0.4341	4.2516	10.1905	4.3375
7	9.8391	2.6645	-3.7415	0.4194	0.9919	0.4733	4.2627	10.0808	4.8102
8	9.4727	2.4019	-4.1758	0.4232	0.9737	0.4511	4.4674	10.2785	4.7619
9	9.6661	3.6535	-3.6877	0.3496	1.0402	0.5427	3.6163	10.7617	5.6149
10	9.4150	4.3550	-3.5711	0.3746	0.8910	0.4808	3.9789	9.4636	5.1063
11	8.9422	2.5649	-4.5791	0.3173	0.4497	0.3109	3.5480	5.0292	3.4768
12	9.0642	2.8765	-4.3960	0.2857	0.4396	0.2679	3.1519	4.8498	2.9557

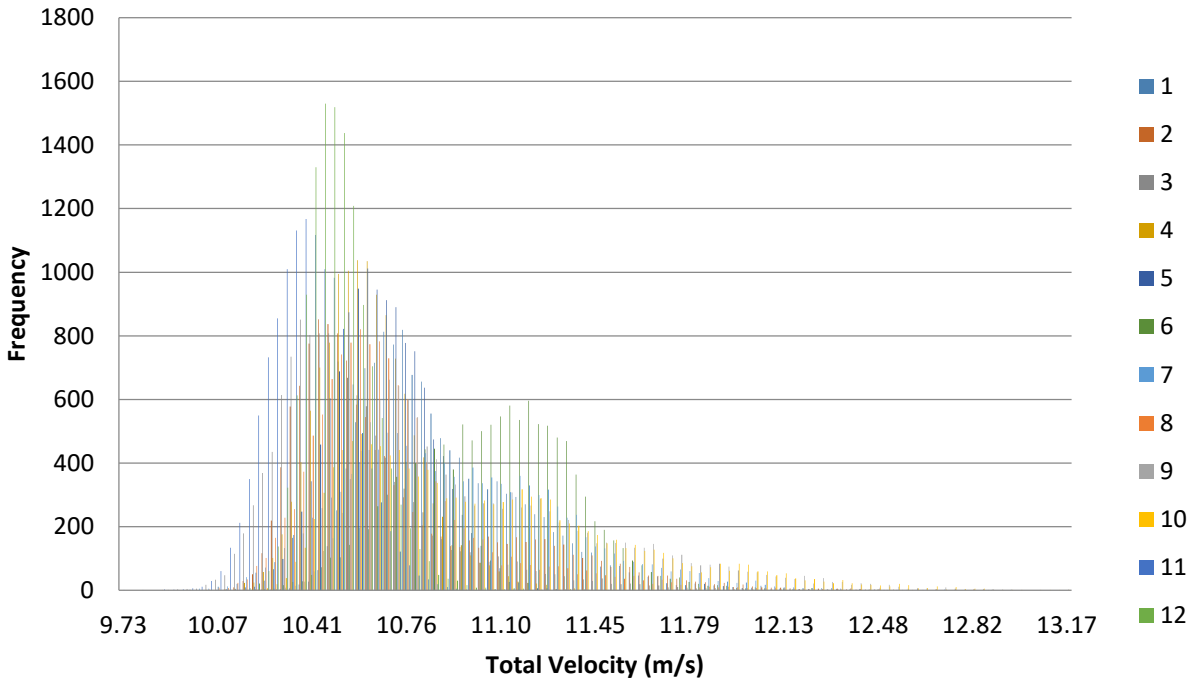


Figure 1. Velocity histogram for each interval (100 bins).

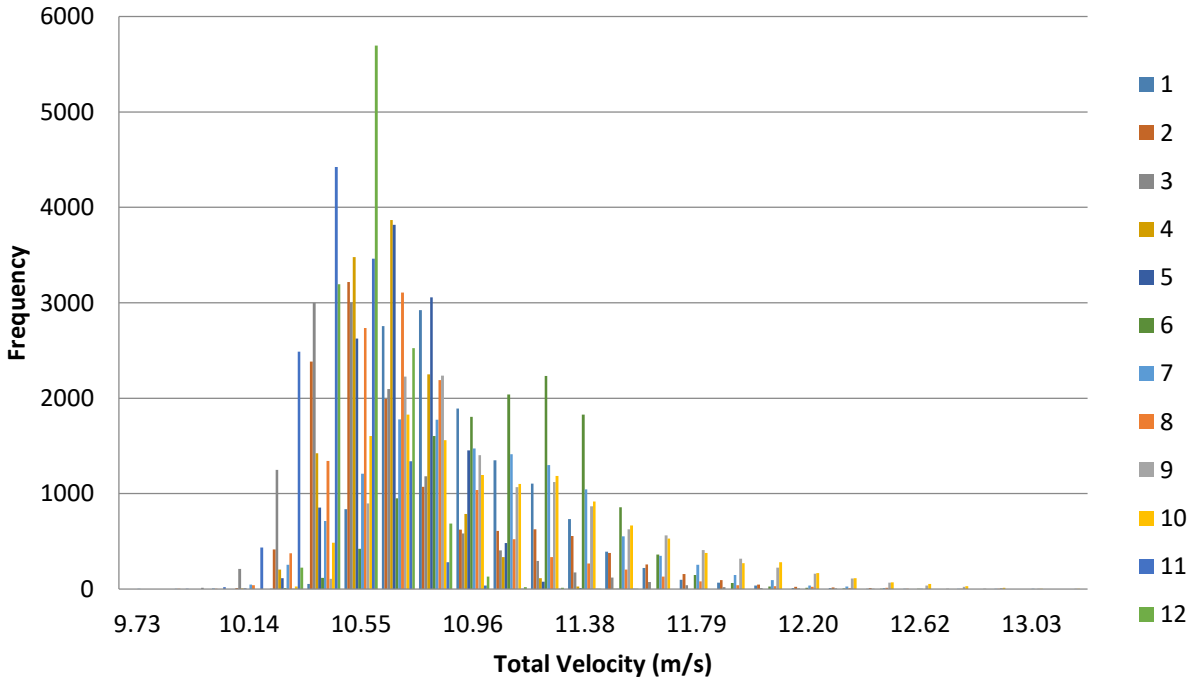
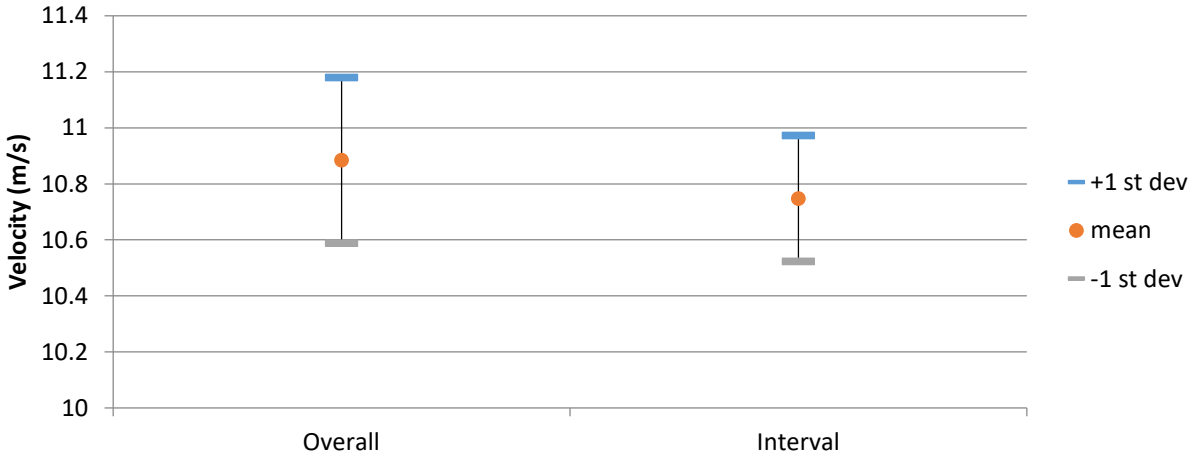
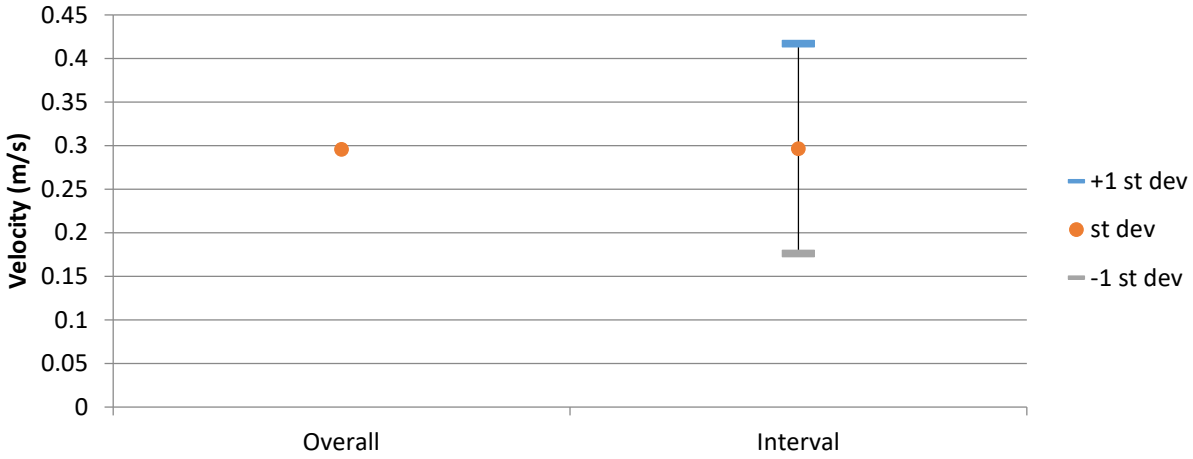


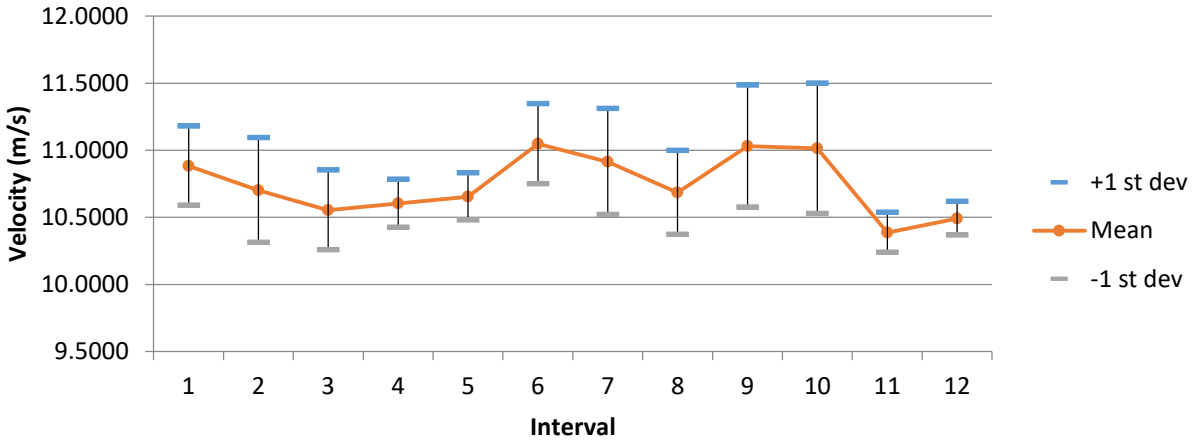
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 166
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: G3
First Sample Date: 19-Aug-13 First Sample Time: 10:06:19.203

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	9.0479	12.5221	10.4246	0.3747
u	7.5600	10.5000	9.1911	0.2984
v	0.7570	7.5300	3.9936	0.8250
w	-5.4300	0.9840	-2.6101	0.8967

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	10.7437	9.0943	9.8851	0.1781	1.8017
2	12.3165	10.0740	10.7331	0.3499	3.2601
3	12.2413	10.0126	10.7512	0.3015	2.8046
4	12.2108	9.5462	10.5135	0.3227	3.0696
5	12.3859	9.9435	10.6143	0.2898	2.7303
6	12.1631	9.8294	10.5521	0.2411	2.2844
7	12.4137	9.7858	10.4395	0.2375	2.2748
8	12.5221	9.3530	10.6231	0.3521	3.3148
9	12.1827	9.3831	10.2197	0.2473	2.4202
10	11.9860	9.0479	10.2712	0.3111	3.0289
11	11.8001	9.4645	10.2067	0.2412	2.3629
12	11.9522	9.6091	10.2855	0.2683	2.6082
		Average	10.4246	0.2784	2.6634
		St Dev	0.2567	0.0521	0.4371

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.3650	3.0155	-0.5244	0.2587	0.4744	0.6183	2.7619	5.0657	6.6022
2	9.2306	4.9168	-2.3319	0.1308	0.6265	0.3112	1.4173	6.7868	3.3717
3	9.3006	4.5462	-2.8200	0.1337	0.6876	0.2577	1.4377	7.3933	2.7707
4	8.9828	4.2763	-3.3048	0.2931	0.7081	0.3878	3.2624	7.8823	4.3166
5	9.2181	4.3175	-2.9138	0.2296	0.6709	0.3734	2.4912	7.2780	4.0509
6	9.3394	4.0051	-2.7608	0.2139	0.5926	0.3468	2.2903	6.3452	3.7130
7	9.2993	3.8785	-2.6245	0.2029	0.6600	0.3935	2.1823	7.0970	4.2318
8	9.1886	4.3413	-2.9686	0.2917	0.7218	0.5259	3.1746	7.8557	5.7239
9	8.8595	3.6697	-3.4135	0.3750	0.6315	0.5952	4.2329	7.1282	6.7184
10	9.4081	3.6114	-1.6221	0.2429	0.8975	0.7372	2.5822	9.5394	7.8356
11	8.9919	3.6921	-3.0416	0.2560	0.5769	0.3139	2.8468	6.4158	3.4905
12	9.1096	3.6526	-2.9950	0.2567	0.6242	0.3347	2.8178	6.8522	3.6739

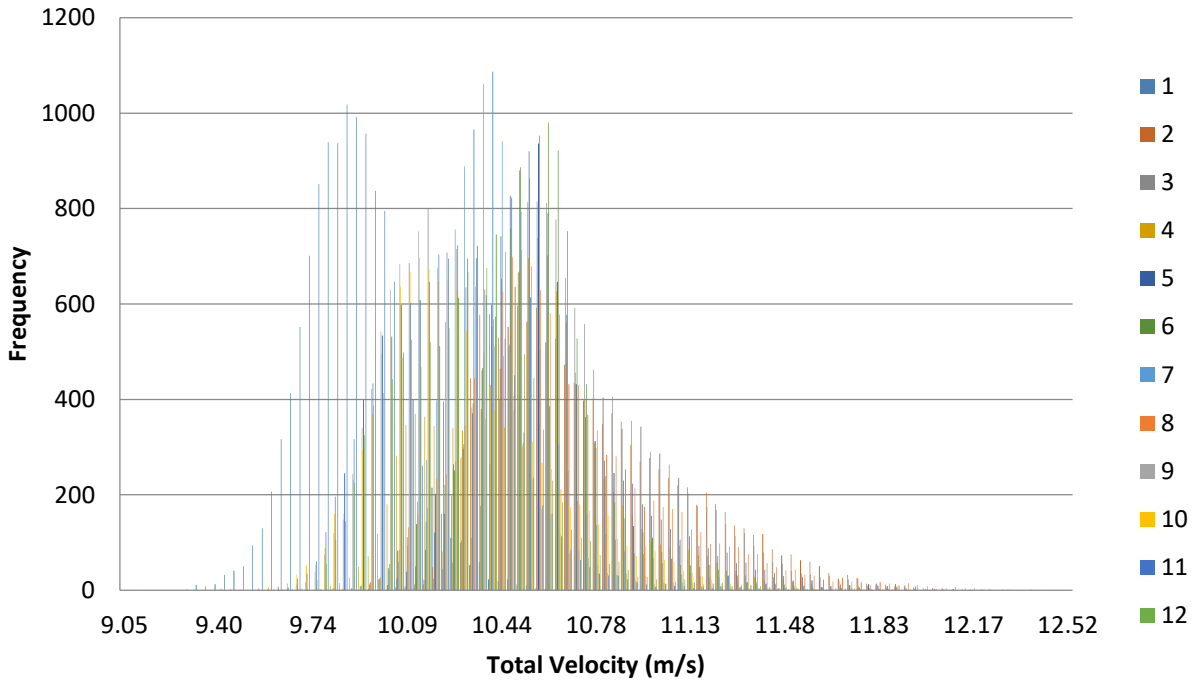


Figure 1. Velocity histogram for each interval (100 bins).

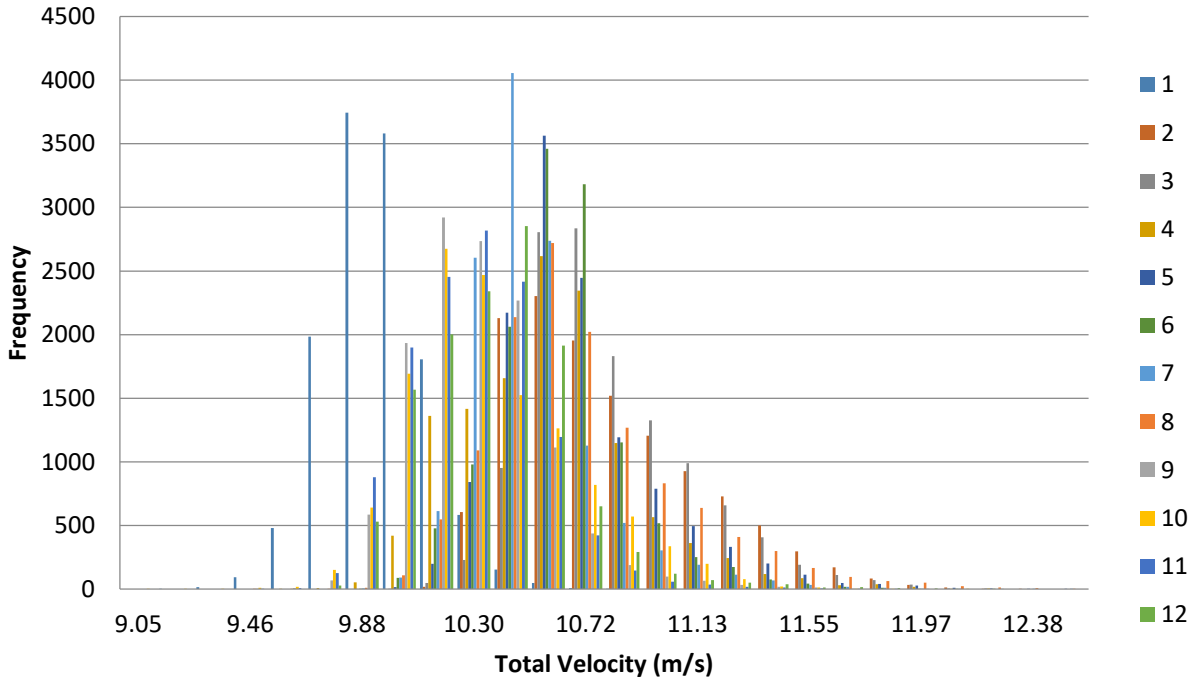
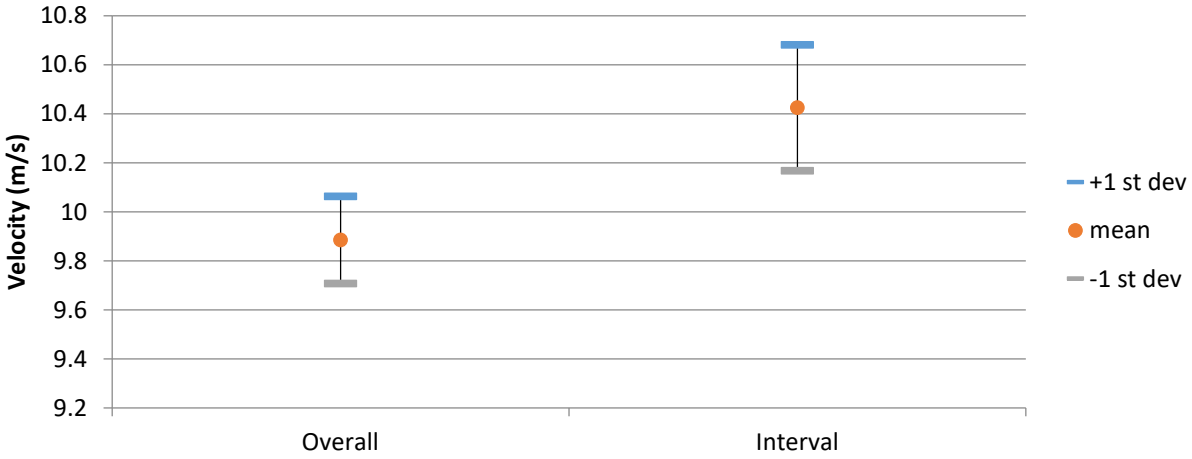
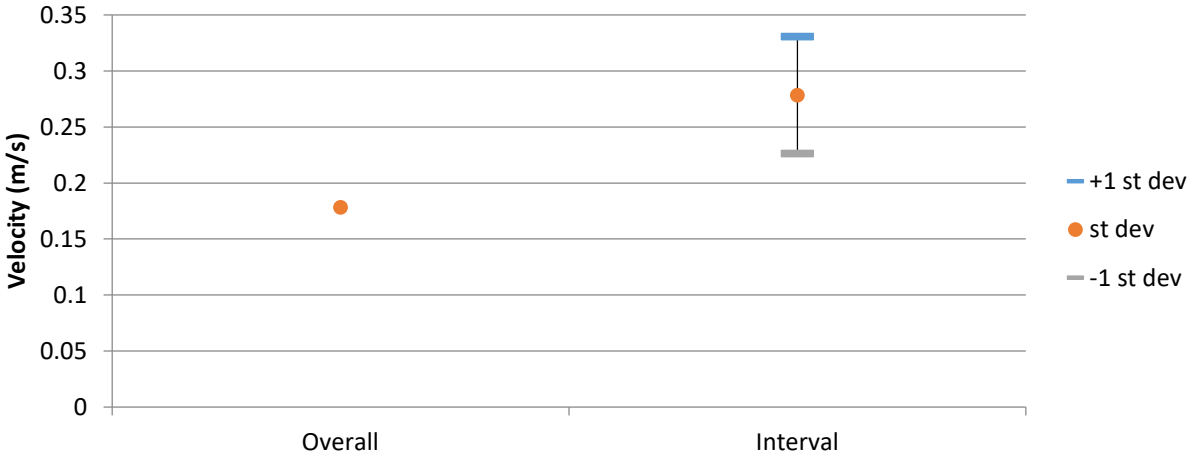


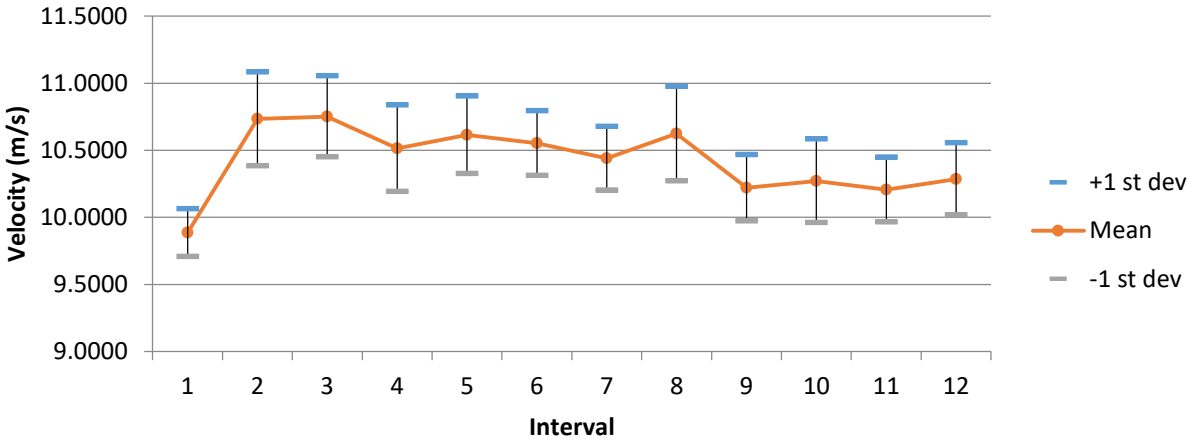
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 167
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 19-Aug-13 First Sample Time: 10:09:12.218

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.1593	13.1231	10.9536	0.1993
u	9.2700	11.6000	10.6353	0.2053
v	-3.2700	5.9800	-0.5982	0.8914
w	-4.9100	0.5740	-2.2830	0.7103

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.8004	10.4114	11.0761	0.1904	1.7194
2	13.1231	10.1795	11.1494	0.2563	2.2989
3	11.7807	10.3762	10.9733	0.1808	1.6480
4	11.6246	10.2579	10.9068	0.1782	1.6335
5	11.7331	10.1593	10.9424	0.2018	1.8444
6	11.4481	10.1982	10.8688	0.1606	1.4776
7	11.5096	10.3267	10.9241	0.1478	1.3526
8	11.6264	10.3236	10.9877	0.1641	1.4934
9	11.5307	10.3144	10.9290	0.1602	1.4655
10	11.3789	10.2307	10.8349	0.1525	1.4073
11	11.4168	10.2943	10.8567	0.1549	1.4271
12	11.6611	10.1822	10.9939	0.1769	1.6094
		Average	10.9536	0.1770	1.6147
		St Dev	0.0909	0.0298	0.2477

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.8798	0.5380	-1.5055	0.1966	0.9812	0.8879	1.8069	9.0181	8.1612
2	10.6436	1.1918	-2.7255	0.2975	1.1409	0.9225	2.7951	10.7187	8.6669
3	10.6921	-0.8109	-2.1310	0.2222	0.4700	0.8091	2.0779	4.3957	7.5673
4	10.6169	-1.4328	-1.9408	0.1658	0.4630	0.4599	1.5616	4.3605	4.3319
5	10.5993	-0.8505	-2.4248	0.1967	0.4056	0.7913	1.8563	3.8271	7.4654
6	10.5892	-1.1475	-2.0887	0.1751	0.3978	0.3958	1.6535	3.7565	3.7379
7	10.6709	-0.6132	-2.2270	0.1601	0.2347	0.2718	1.5000	2.1991	2.5471
8	10.5794	-0.8423	-2.8024	0.1461	0.3062	0.3947	1.3811	2.8943	3.7306
9	10.5958	-0.8663	-2.4993	0.1490	0.2725	0.3224	1.4064	2.5721	3.0425
10	10.6026	-0.8735	-2.0200	0.1572	0.2455	0.2754	1.4828	2.3157	2.5976
11	10.6202	-0.8992	-2.0097	0.1653	0.3279	0.3476	1.5564	3.0874	3.2731
12	10.5339	-0.5718	-3.0218	0.1642	0.4713	0.4775	1.5584	4.4742	4.5325

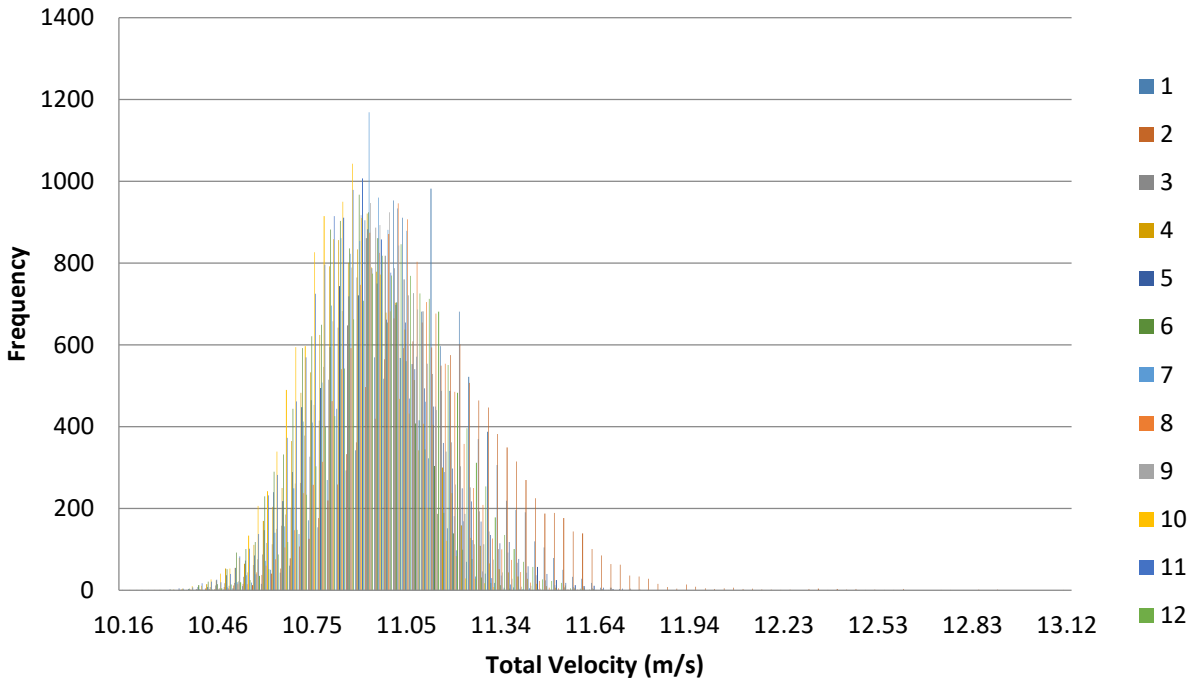


Figure 1. Velocity histogram for each interval (100 bins).

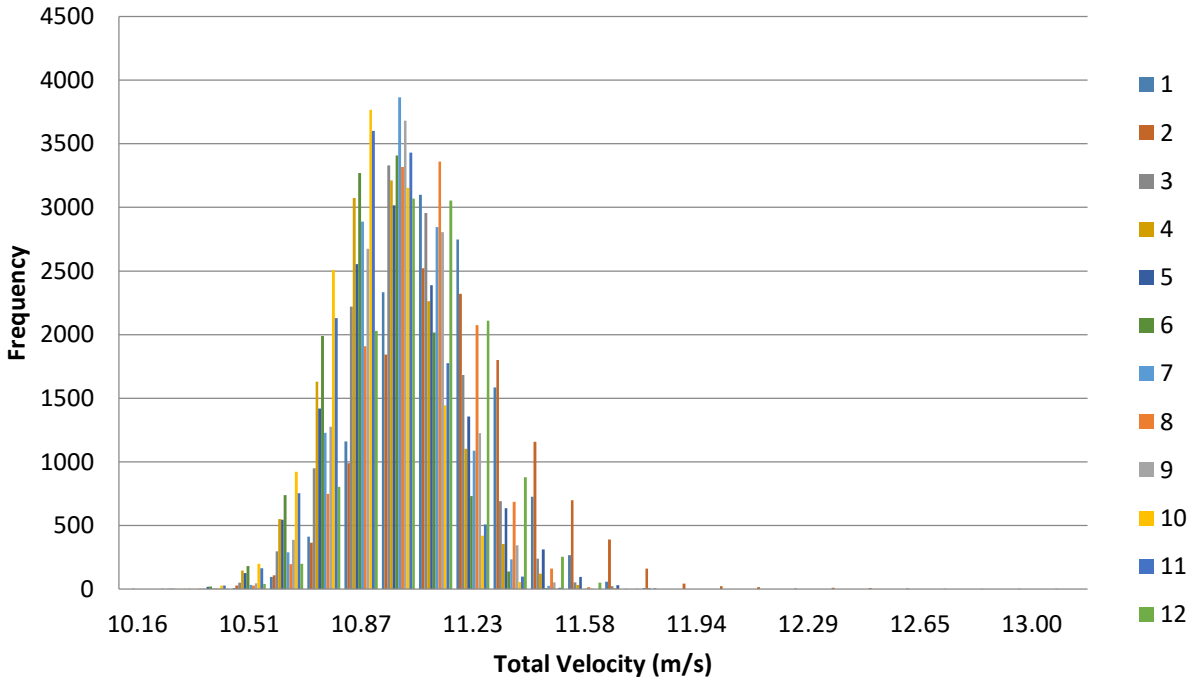
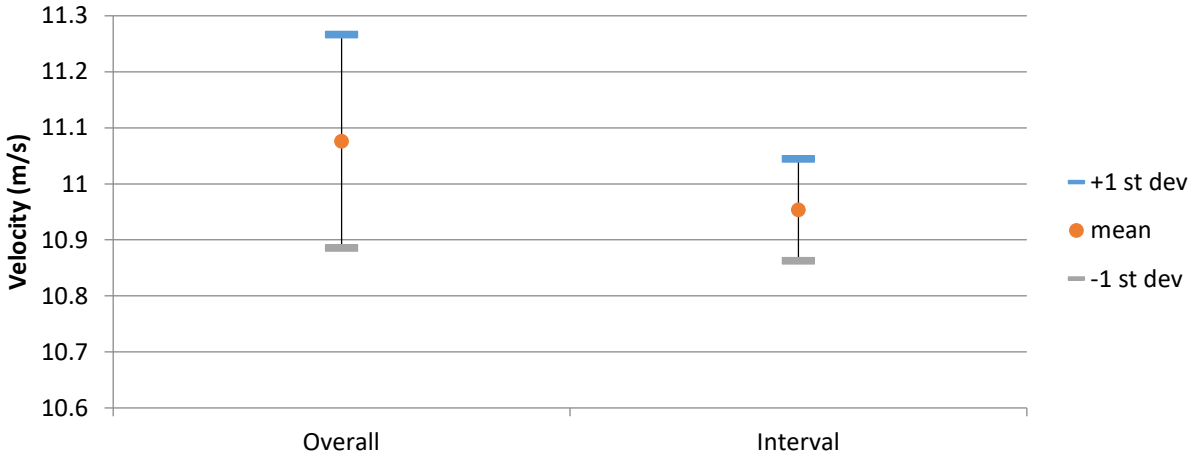
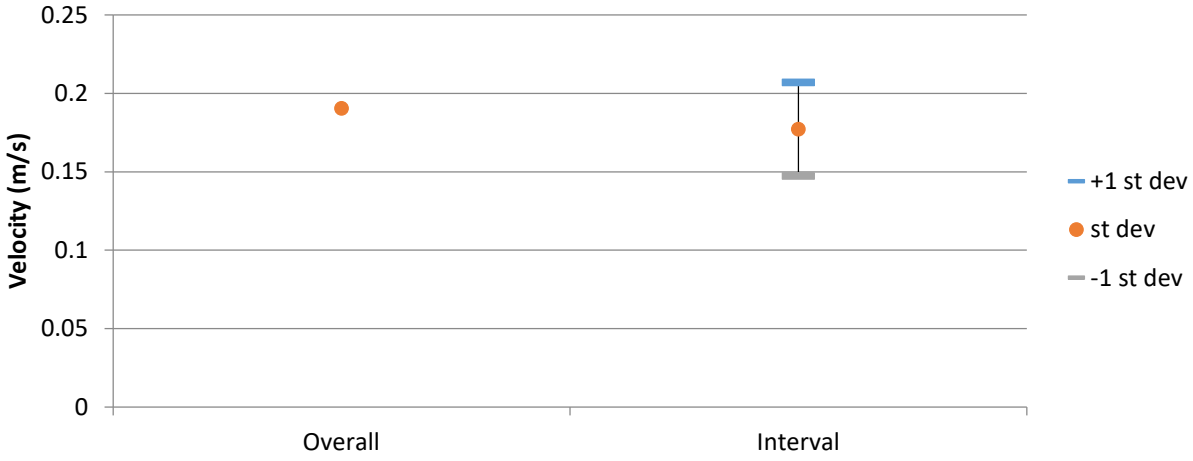


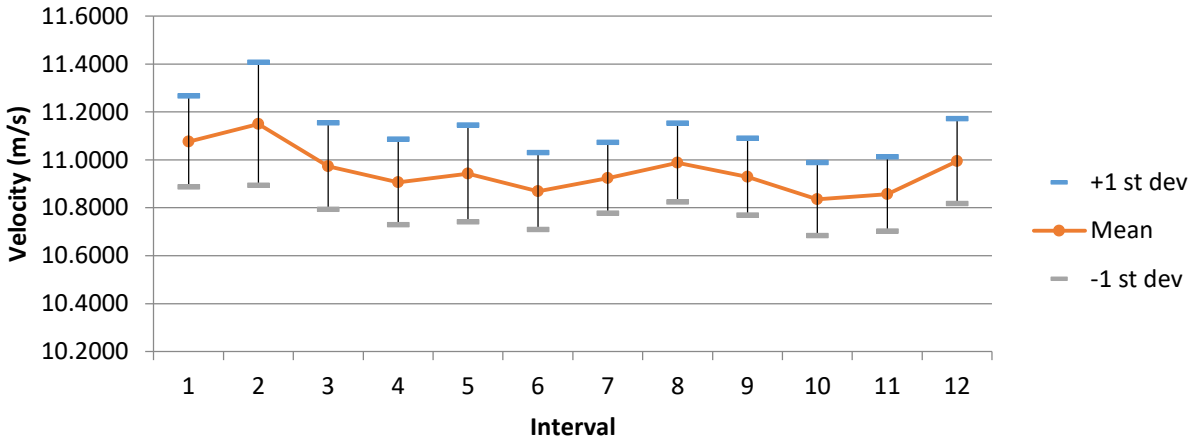
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 207
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: A5
First Sample Date: 23-Aug-13
First Sample Time: 07:44:48.734

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.3100	8.1134	8.8650	0.1897
u	7.4300	5.5600	6.2888	0.2627
v	-5.3200	-7.3200	-6.2334	0.2540
w	0.7670	-1.7300	-0.0499	0.2881

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	9.4153	8.3298	8.7885	0.1279	1.4557	53	0.42 %
2	9.4599	8.2885	8.8345	0.1640	1.8558	0	0.00 %
3	9.5341	8.3518	8.8880	0.1623	1.8264	9	0.07 %
4	9.4650	8.4595	8.9867	0.1234	1.3731	631	5.05 %
5	9.3741	8.4860	8.9346	0.1115	1.2475	2654	21.23 %
6	10.3100	8.3120	8.9772	0.2307	2.5693	813	6.50 %
7	9.4618	8.2882	8.8610	0.1508	1.7020	15	0.12 %
8	9.8376	8.5098	8.9503	0.1180	1.3182	219	1.75 %
9	10.2897	8.1281	8.8496	0.2158	2.4384	662	5.30 %
10	9.2873	8.1134	8.6201	0.1289	1.4949	213	1.70 %
		Average	8.8690	0.1533	1.7281		
		St dev	0.1034	0.0390	0.4350		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	6.2498	-6.1699	-0.1141	0.2278	0.1863	0.1624	3.6448	2.9809	2.5982
2	6.5345	-5.9404	0.0270	0.2391	0.1102	0.1290	3.6584	1.6870	1.9749
3	6.4643	-6.0894	0.1221	0.2382	0.1795	0.2262	3.6850	2.7766	3.4999
4	6.2635	-6.4312	0.2862	0.2019	0.1500	0.1963	3.2229	2.3941	3.1332
5	6.1042	-6.5202	0.0077	0.1254	0.1209	0.1865	2.0549	1.9800	3.0556
6	6.3200	-6.3495	-0.4206	0.2296	0.2114	0.3327	3.6324	3.3451	5.2644
7	6.4260	-6.0877	0.1192	0.2836	0.2331	0.1912	4.4130	3.6273	2.9752
8	6.2228	-6.4267	-0.1307	0.1515	0.1344	0.1972	2.4353	2.1595	3.1694
9	6.1256	-6.3721	-0.3084	0.1837	0.2071	0.2537	2.9981	3.3817	4.1409
10	6.0918	-6.0905	-0.1060	0.2214	0.1867	0.1507	3.6339	3.0644	2.4739

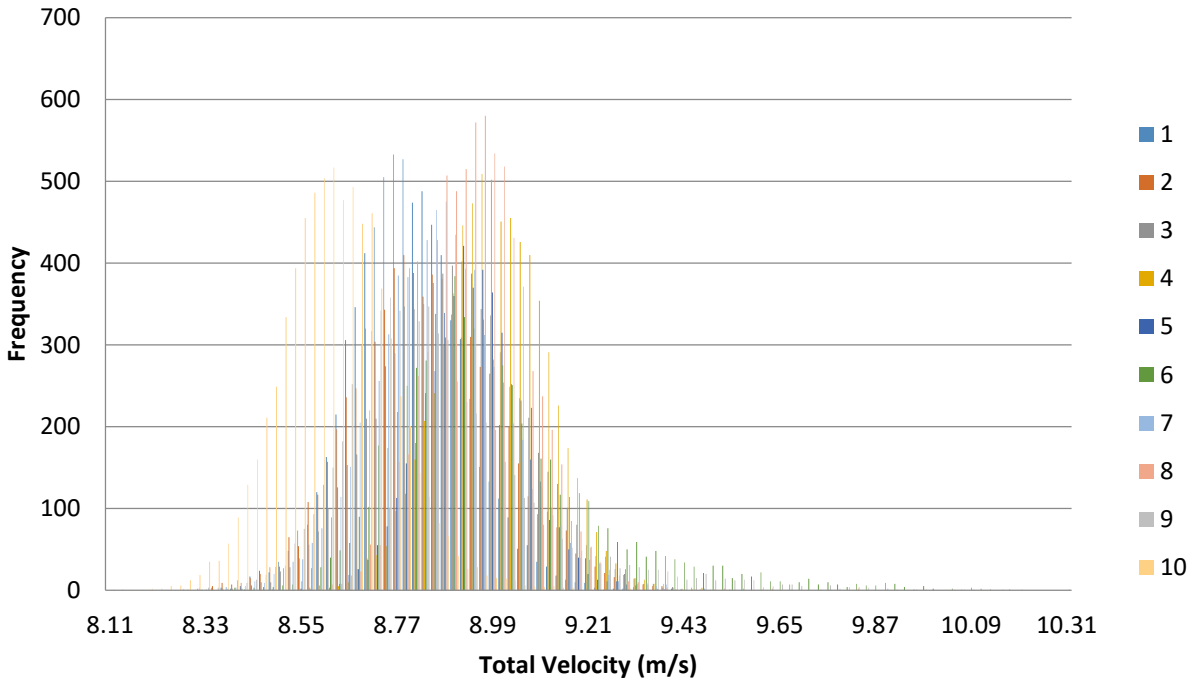


Figure 1. Velocity histogram for each interval (100 bins).

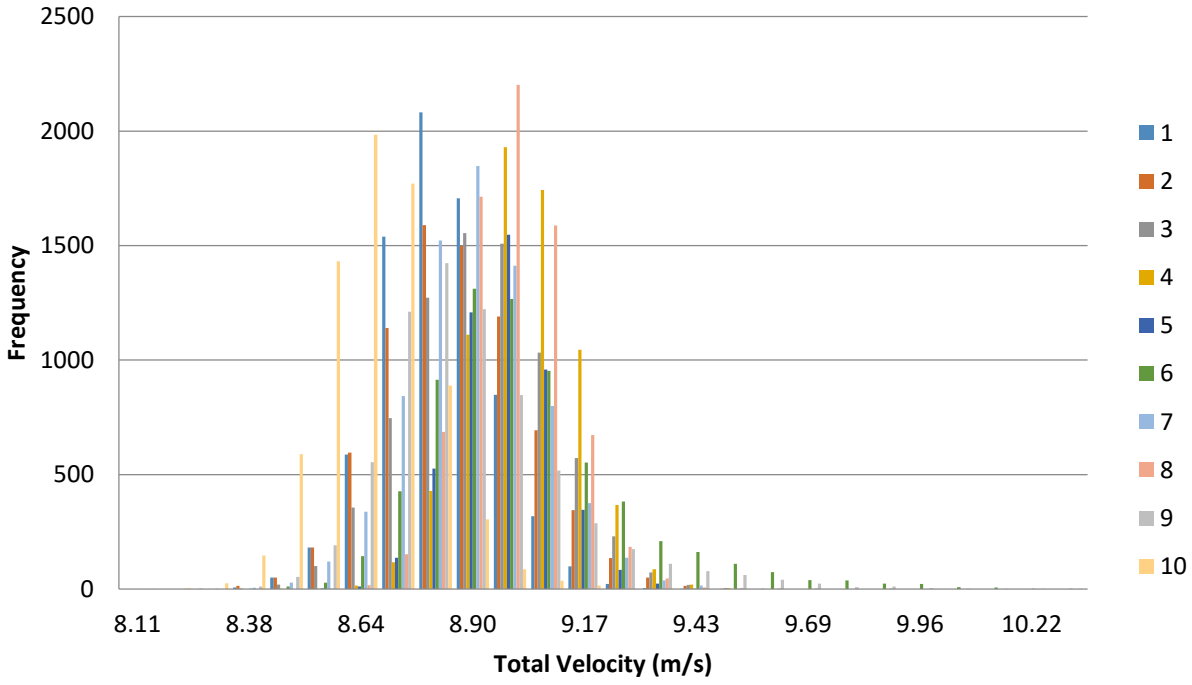
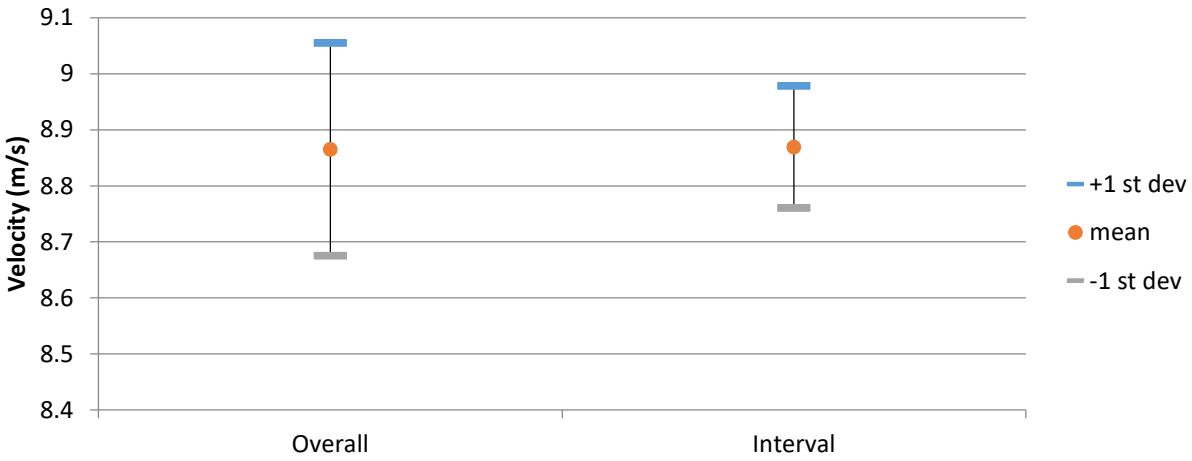
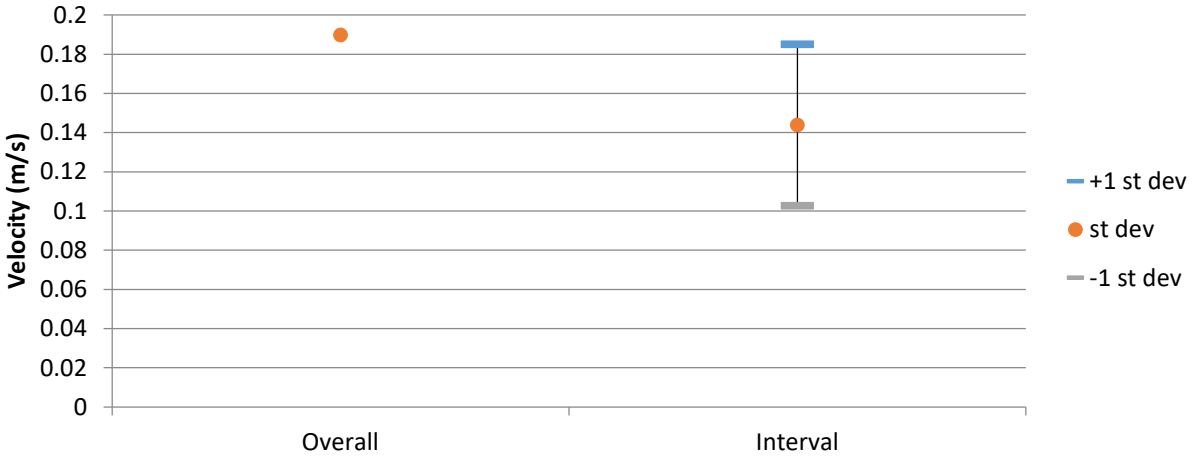


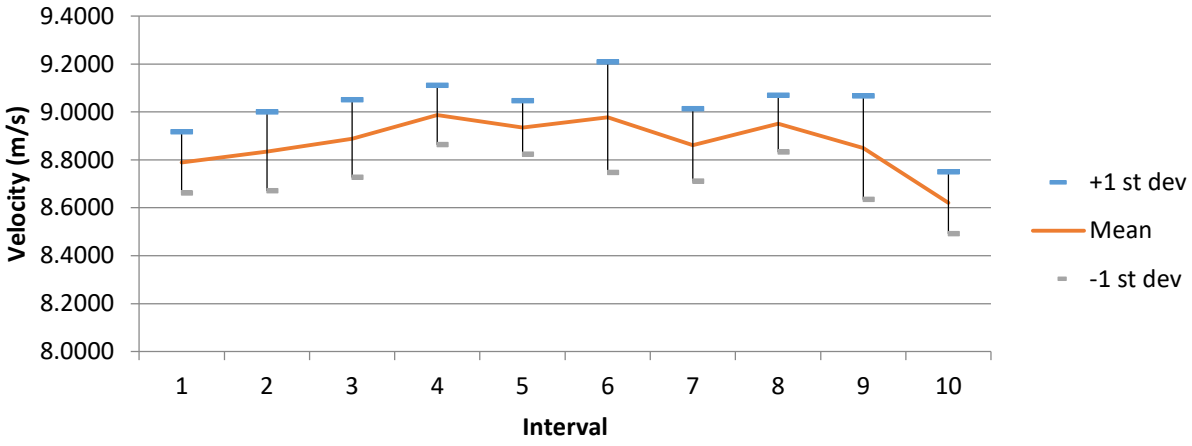
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 208
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 23-Aug-13
First Sample Time: 07:47:52.609

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.7527	10.4145	11.0870	0.1724
u	11.5000	10.1000	10.7606	0.1571
v	0.8520	-1.8500	-0.3880	0.3732
w	-1.2700	-3.9100	-2.5804	0.4313

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.6806	10.5832	11.1711	0.1522	1.6205
2	11.7359	10.5568	11.1457	0.1806	1.4298
3	11.4921	10.4324	10.9821	0.1570	1.4308
4	11.7527	10.4145	11.0015	0.1574	1.4440
5	11.7161	10.5874	11.1712	0.1613	1.3750
6	11.5881	10.4595	10.9958	0.1512	1.4160
7	11.6795	10.5323	11.1124	0.1574	1.3444
8	11.5856	10.4749	11.0882	0.1491	1.3966
9	11.7331	10.4782	11.0737	0.1547	1.4332
10	11.7249	10.4415	11.1278	0.1595	1.4254
		Average	11.0870	0.1580	1.4316
		St Dev	0.0720	0.0088	0.0694

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.7477	-0.3706	-3.0047	0.1539	0.2424	0.2347	1.4324	2.2555	2.1840
2	10.8055	-0.2309	-2.6819	0.1537	0.2184	0.4281	1.4220	2.0212	3.9619
3	10.7953	-0.4829	-1.9165	0.1558	0.3003	0.2720	1.4433	2.7822	2.5192
4	10.7829	0.0745	-2.1549	0.1464	0.2062	0.2700	1.3577	1.9123	2.5039
5	10.7980	-0.1657	-2.8386	0.1504	0.2282	0.2529	1.3930	2.1132	2.3417
6	10.6805	-0.8416	-2.4299	0.1509	0.4179	0.2144	1.4124	3.9125	2.0078
7	10.6859	-0.6618	-2.9498	0.1475	0.2624	0.3063	1.3803	2.4555	2.8667
8	10.7255	-0.5628	-2.7422	0.1416	0.1898	0.2032	1.3204	1.7698	1.8945
9	10.7543	-0.5123	-2.5665	0.1489	0.2433	0.2540	1.3848	2.2620	2.3620
10	10.8307	-0.1257	-2.5193	0.1450	0.2645	0.3118	1.3386	2.4419	2.8785

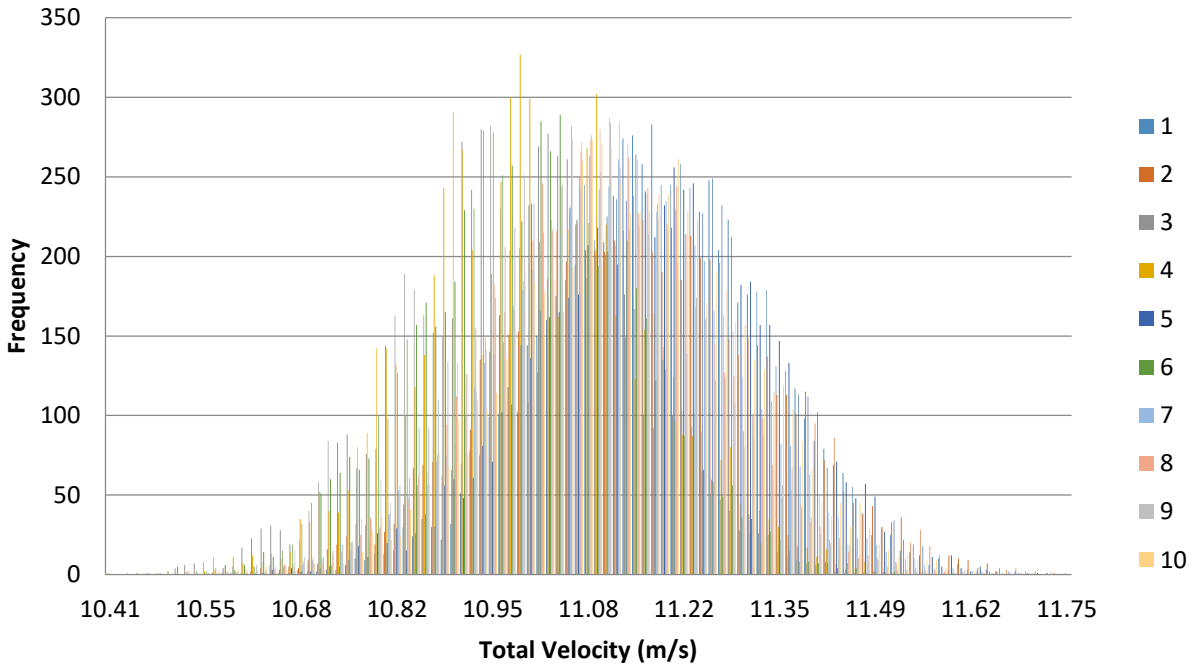


Figure 1. Velocity histogram for each interval (100 bins).

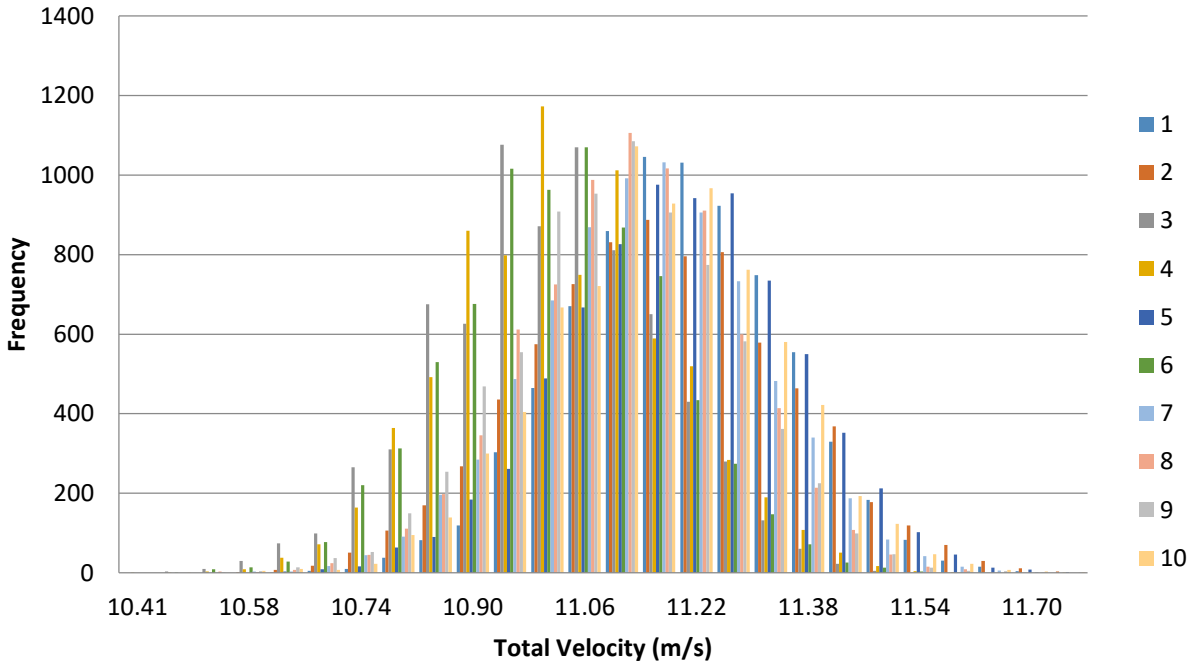
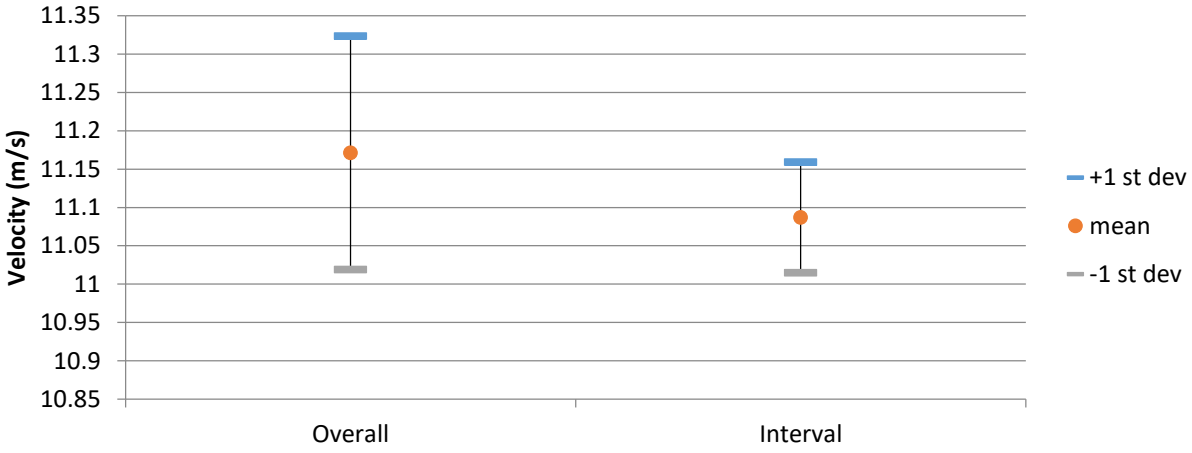
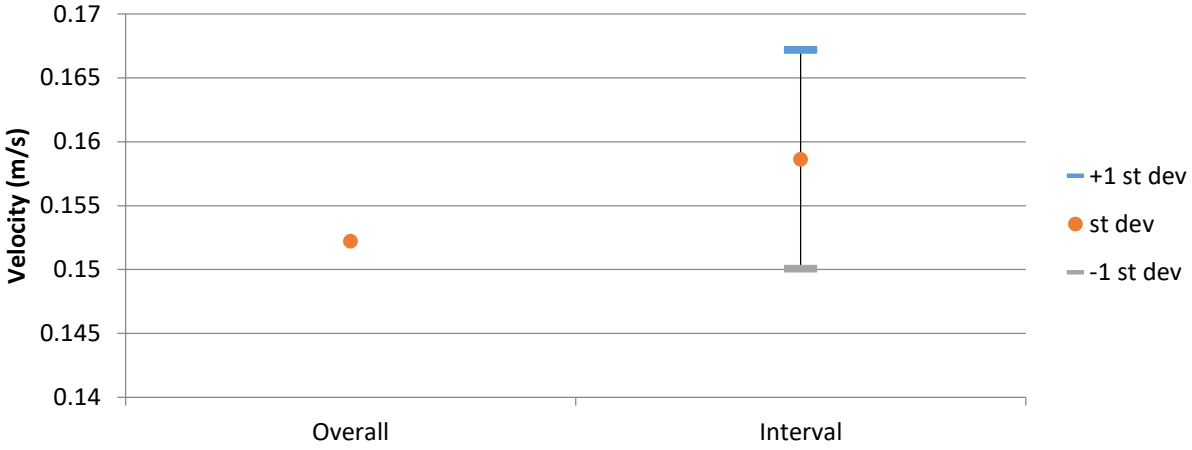


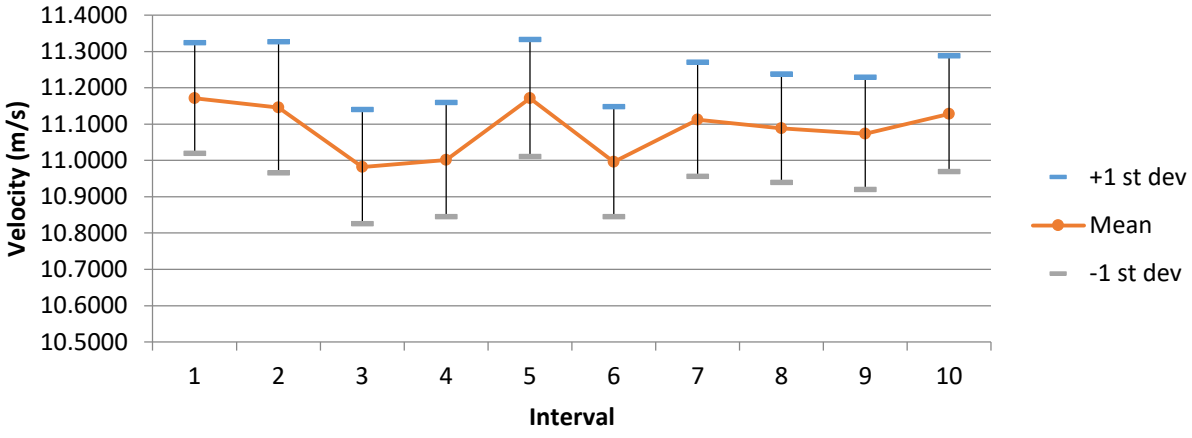
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 209
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E2
First Sample Date: 23-Aug-13
First Sample Time: 07:50:48.453

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	13.8464	10.9537	12.2605	0.3864
u	12.8000	9.0300	11.1516	0.5838
v	3.4300	-3.8100	0.0830	0.7681
w	-2.4300	-7.7900	-4.9783	0.6234

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	13.2225	11.3618	12.3479	0.3319	2.3865
2	13.2386	11.2085	12.0735	0.2881	3.0908
3	13.3666	11.2543	12.1467	0.3754	2.5579
4	13.2833	11.3660	12.4722	0.3190	2.9315
5	13.1076	11.2048	12.1464	0.3561	2.6499
6	13.2554	11.2045	12.3168	0.3264	2.6598
7	13.0615	11.1218	12.1011	0.3219	3.0899
8	13.6220	11.0052	12.1995	0.3770	3.7964
9	13.8464	10.9593	12.4909	0.4742	3.1693
10	13.5123	10.9537	12.3097	0.3901	2.9037
		Average	12.2605	0.3560	2.9236
		St Dev	0.1495	0.0522	0.3801

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	11.3272	0.0717	-4.8797	0.4471	0.3295	0.3879	3.9468	2.9091	3.4242
2	10.8796	0.3832	-5.0004	0.5490	1.2114	0.7535	5.0463	11.1345	6.9259
3	11.0365	0.7626	-4.9310	0.5948	0.5578	0.5632	5.3895	5.0543	5.1030
4	11.4464	-0.2368	-4.8903	0.4484	0.3931	0.5579	3.9172	3.4345	4.8739
5	11.1394	0.4011	-4.7824	0.4719	0.4943	0.2768	4.2362	4.4376	2.4853
6	11.4283	-0.0732	-4.5523	0.3894	0.4523	0.3465	3.4074	3.9579	3.0317
7	10.9577	0.4113	-5.0614	0.5213	0.3704	0.5239	4.7575	3.3804	4.7814
8	10.8440	-0.2000	-5.4365	0.6065	1.0051	0.6366	5.5930	9.2686	5.8710
9	11.2027	-0.3825	-5.3941	0.7662	0.5990	0.7486	6.8391	5.3473	6.6823
10	11.2548	-0.3075	-4.8545	0.5697	0.7530	0.6769	5.0618	6.6905	6.0145

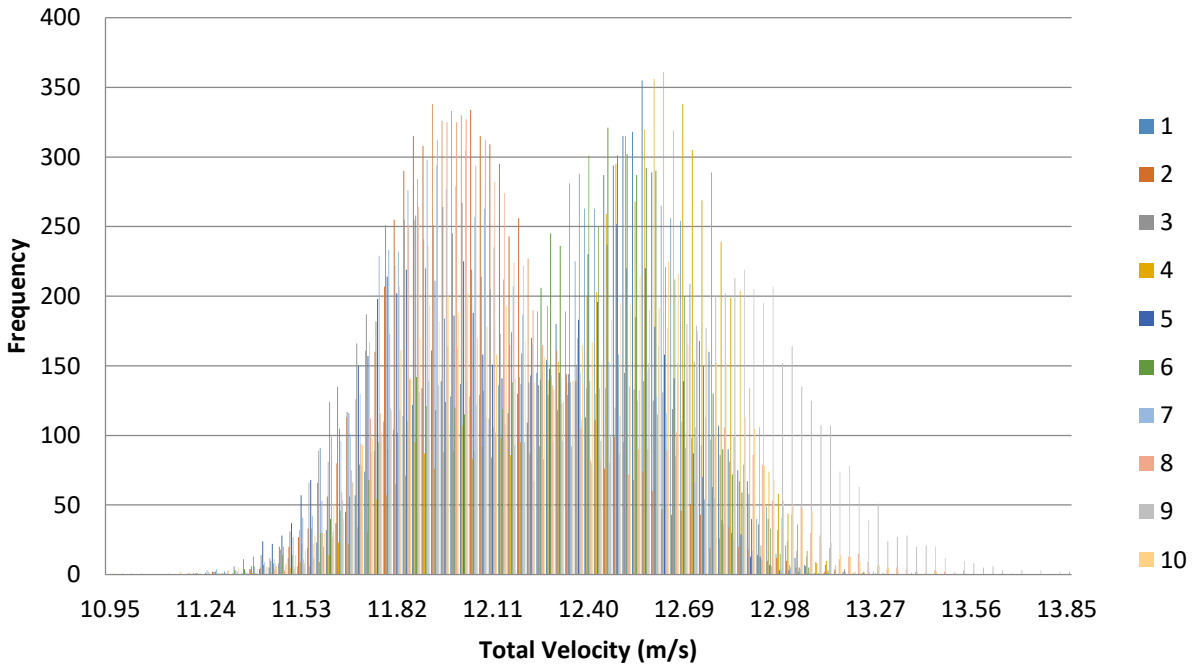


Figure 1. Velocity histogram for each interval (100 bins).

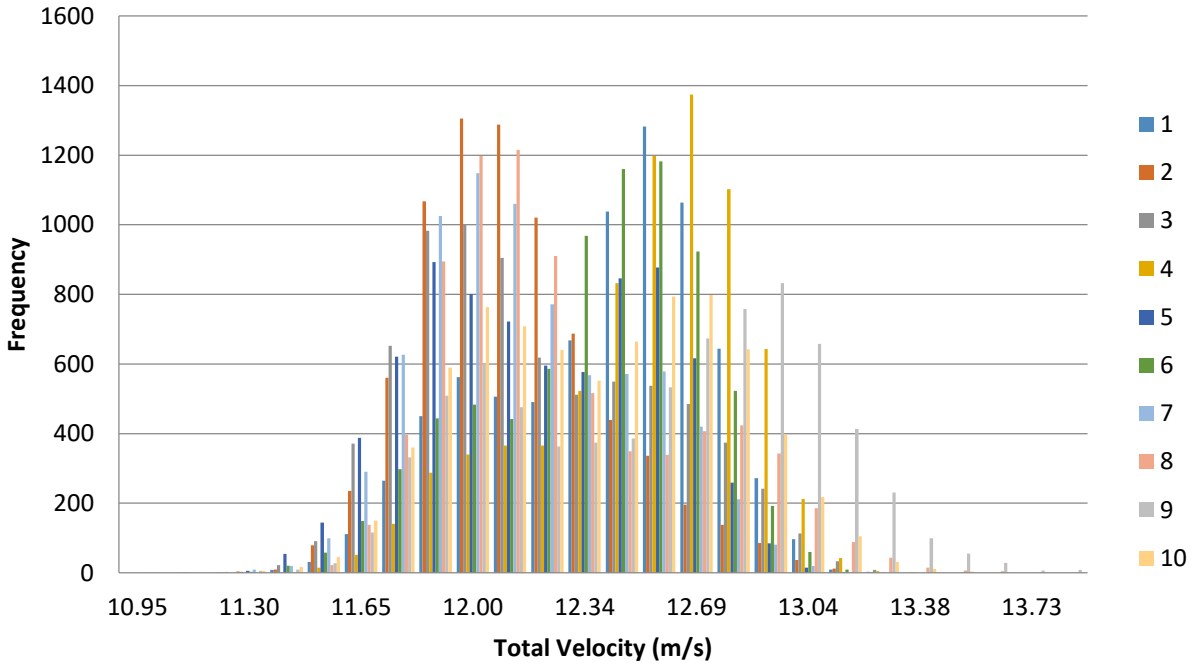
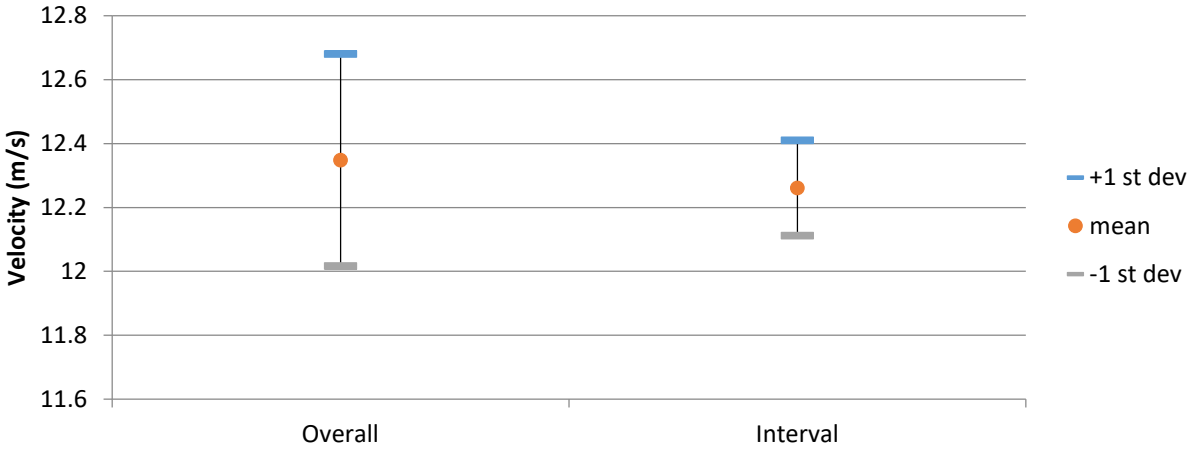
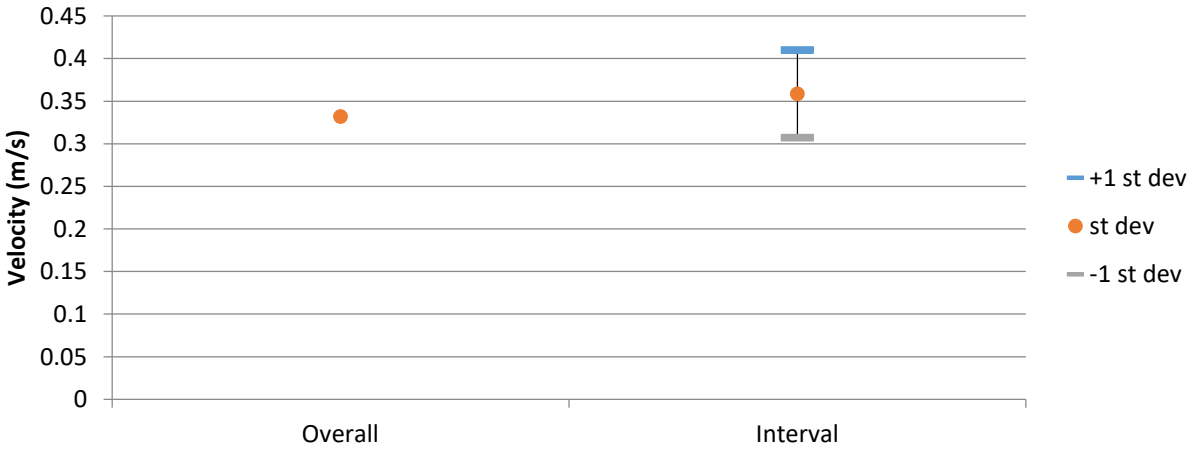


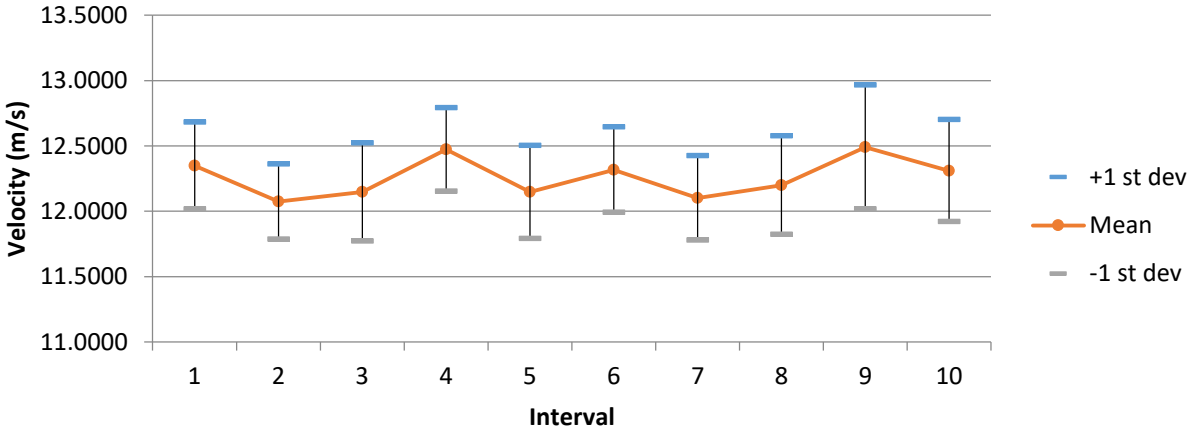
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 210
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E4
First Sample Date: 23-Aug-13
First Sample Time: 07:52:33.062

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.6902	9.3393	10.5791	0.3102
u	11.6000	9.2900	10.5121	0.3111
v	0.8080	-2.0400	-0.4847	0.3617
w	0.3970	-2.8600	-0.9718	0.3221

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.5879	9.4730	10.5669	0.3106	2.8946
2	11.6902	9.3393	10.5540	0.3055	2.8411
3	11.5291	9.3679	10.5898	0.3009	2.8286
4	11.4389	9.5471	10.5454	0.2983	2.8766
5	11.6844	9.3628	10.5602	0.3038	2.9764
6	11.5818	9.4184	10.5616	0.3144	2.9541
7	11.5743	9.4030	10.5664	0.3121	3.0005
8	11.5754	9.4915	10.6070	0.3183	2.8928
9	11.6830	9.6192	10.6218	0.3073	3.0107
10	11.5847	9.3694	10.6179	0.3197	2.9216
		Average	10.5791	0.3091	2.9197
		St Dev	0.0278	0.0072	0.0608

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.4646	-0.9712	-0.9736	0.3038	0.2774	0.4331	2.9036	2.6511	4.1384
2	10.5215	-0.5458	-0.3823	0.3015	0.4405	0.2189	2.8656	4.1865	2.0807
3	10.5381	-0.2417	-0.9466	0.3026	0.2669	0.2573	2.8716	2.5324	2.4418
4	10.4656	-0.5982	-1.0517	0.2994	0.3572	0.2930	2.8609	3.4131	2.7994
5	10.4910	-0.6081	-1.0069	0.3012	0.2272	0.1528	2.8714	2.1656	1.4563
6	10.4803	-0.6642	-1.0670	0.3121	0.3183	0.1780	2.9776	3.0368	1.6982
7	10.4785	-0.3662	-1.2564	0.3179	0.2151	0.2958	3.0342	2.0526	2.8233
8	10.5501	-0.3333	-1.0037	0.3186	0.2213	0.1932	3.0197	2.0974	1.8312
9	10.5675	-0.2485	-1.0143	0.3086	0.2201	0.1055	2.9206	2.0825	0.9984
10	10.5633	-0.2701	-1.0157	0.3208	0.2082	0.0910	3.0370	1.9714	0.8619

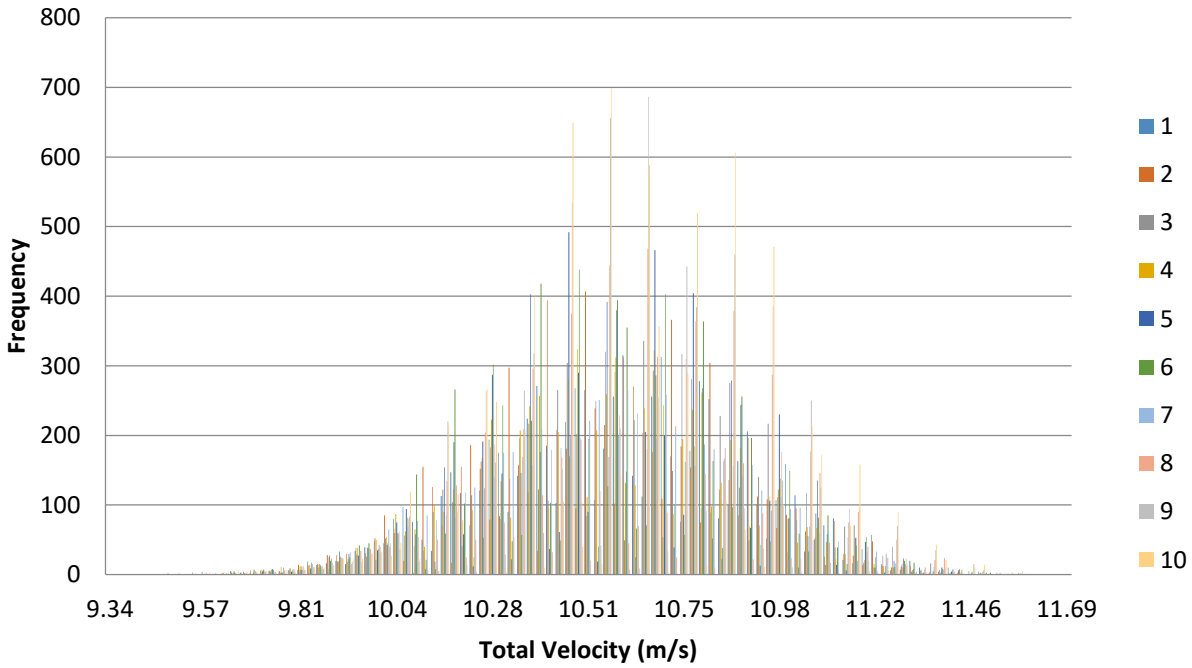


Figure 1. Velocity histogram for each interval (100 bins).

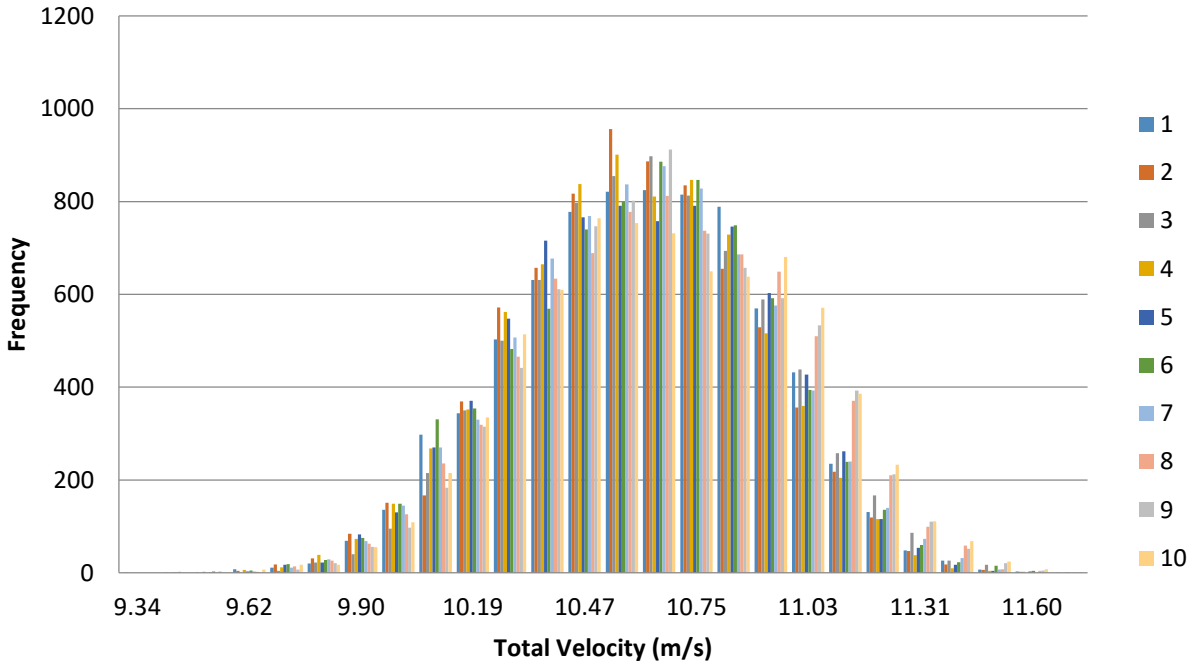
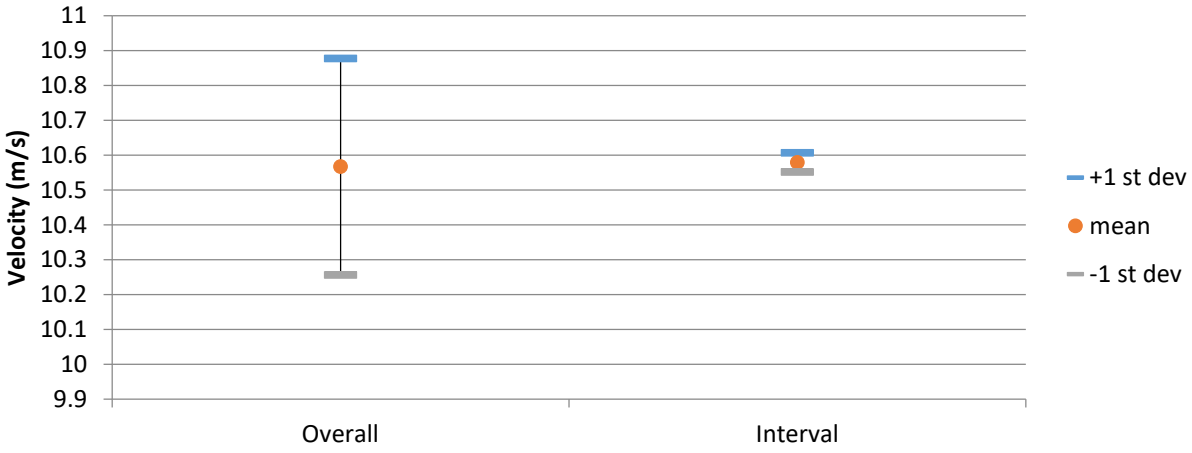
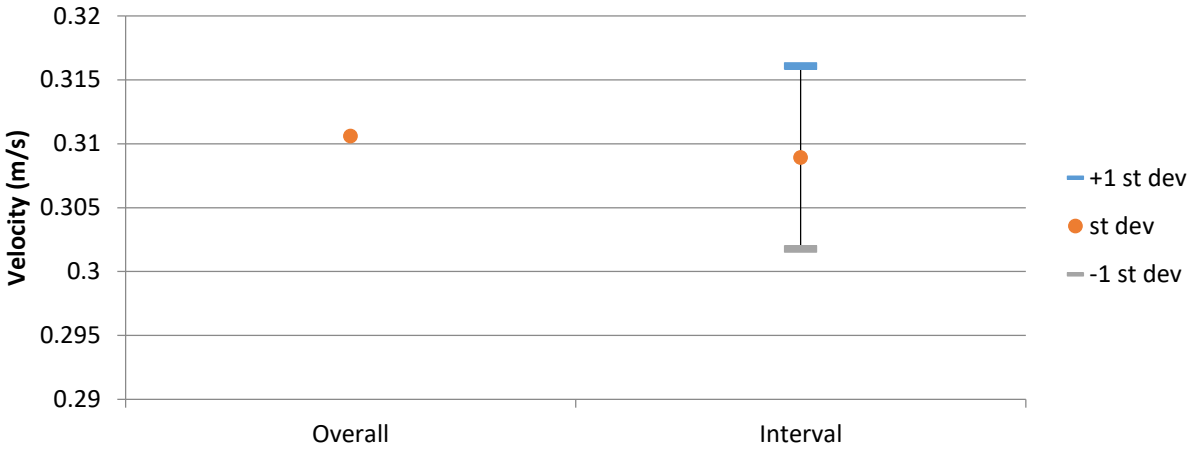


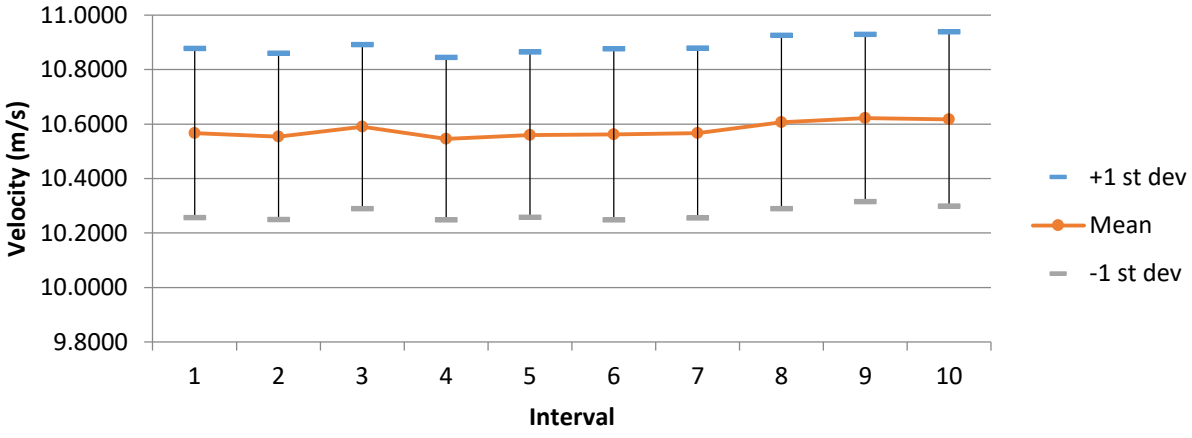
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 211
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E5
First Sample Date: 23-Aug-13
First Sample Time: 07:54:28.390

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.4209	9.6637	10.4916	0.1957
u	11.4000	9.6000	10.4692	0.1977
v	1.6600	-0.9440	0.1511	0.3182
w	0.0031	-1.3900	-0.5651	0.1581

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.2097	9.6998	10.4814	0.1960	1.8682
2	11.2090	9.6637	10.5039	0.1962	1.8159
3	11.1307	9.7193	10.4898	0.1905	1.8391
4	11.1400	9.7971	10.4781	0.1927	1.7904
5	11.1229	9.8017	10.4890	0.1878	1.8336
6	11.2330	9.8068	10.4889	0.1923	1.9991
7	11.4205	9.7137	10.4647	0.2092	1.8467
8	11.2120	9.8179	10.4957	0.1938	1.8924
9	11.4209	9.8022	10.5274	0.1992	1.8284
10	11.2293	9.7273	10.4969	0.1919	1.8584
		Average	10.4916	0.1950	1.8572
		St Dev	0.0167	0.0059	0.0543

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.4643	0.3364	-0.4297	0.2001	0.1934	0.1439	1.9119	1.8482	1.3754
2	10.4810	0.3948	-0.5039	0.2010	0.2243	0.1306	1.9175	2.1402	1.2461
3	10.4736	-0.0630	-0.5375	0.1905	0.1689	0.1340	1.8186	1.6127	1.2794
4	10.4563	-0.1390	-0.6010	0.1923	0.2364	0.1418	1.8394	2.2607	1.3566
5	10.4691	-0.2123	-0.5835	0.1869	0.1560	0.0840	1.7851	1.4901	0.8024
6	10.4687	-0.0644	-0.6083	0.1929	0.2007	0.0977	1.8430	1.9167	0.9335
7	10.4501	0.1349	-0.4908	0.2113	0.1743	0.1290	2.0219	1.6681	1.2341
8	10.4618	0.4952	-0.5706	0.1976	0.2913	0.2327	1.8885	2.7840	2.2248
9	10.4966	0.3446	-0.6728	0.2041	0.2273	0.1497	1.9448	2.1657	1.4264
10	10.4705	0.2841	-0.6531	0.1955	0.1805	0.1139	1.8675	1.7237	1.0878

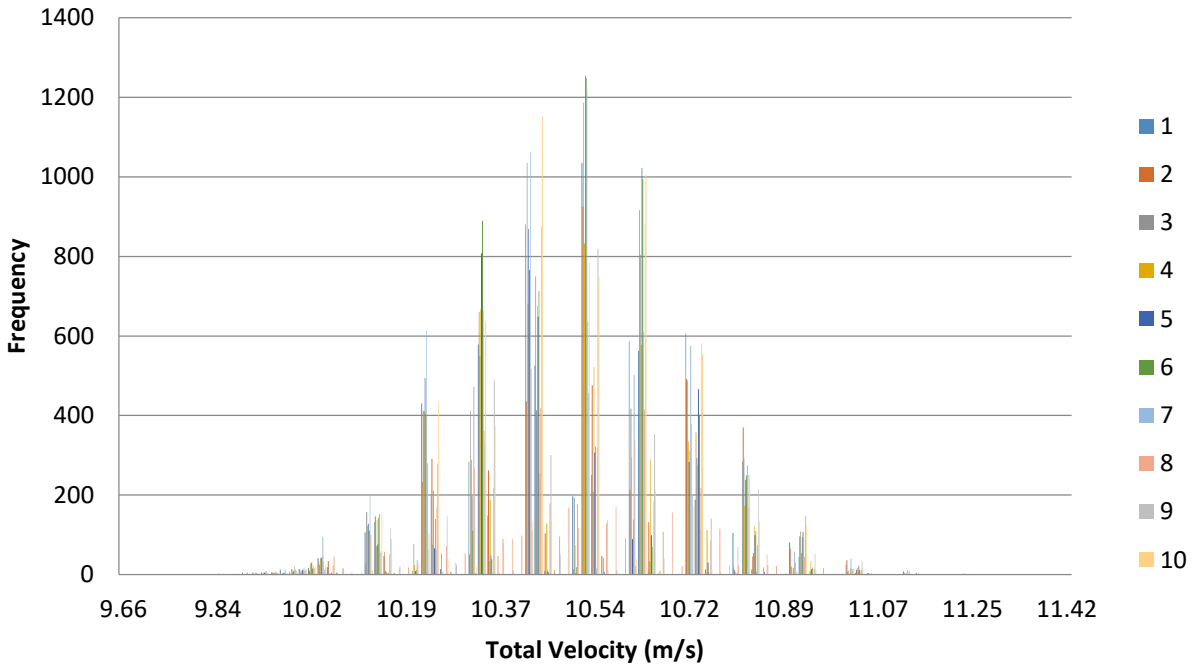


Figure 1. Velocity histogram for each interval (100 bins).

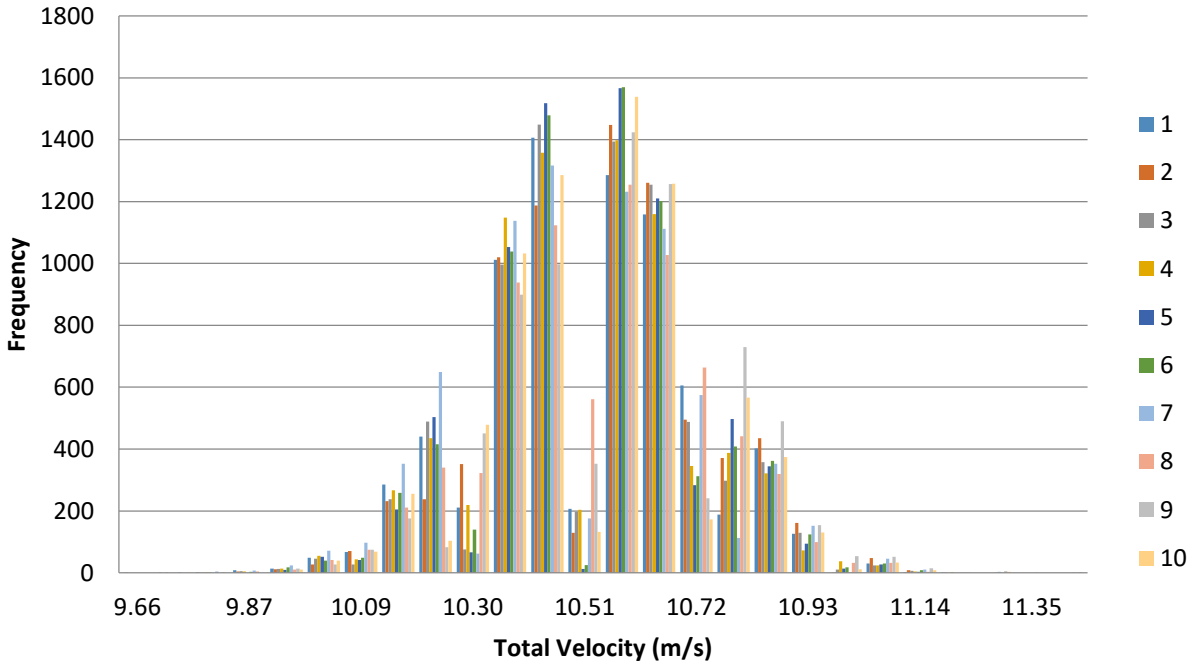
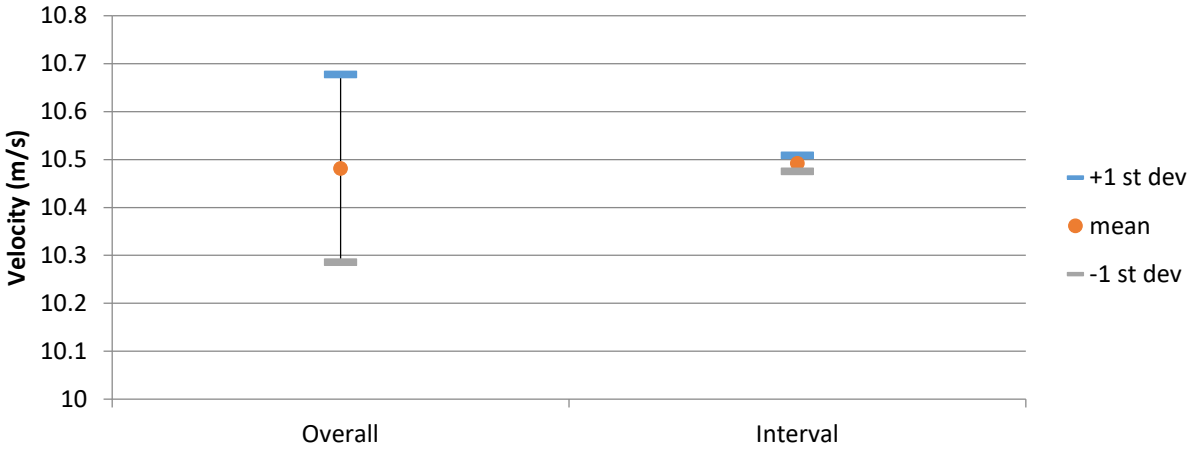
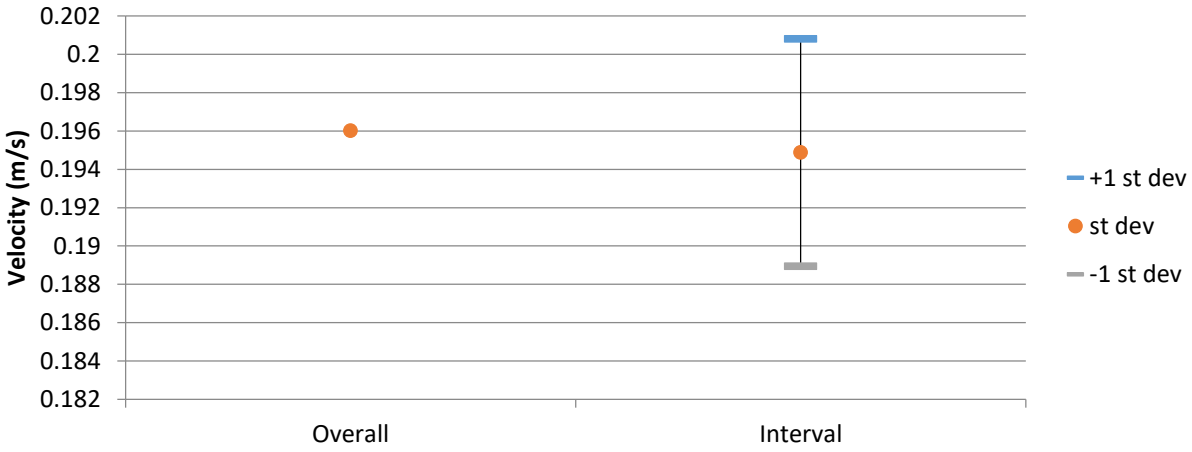


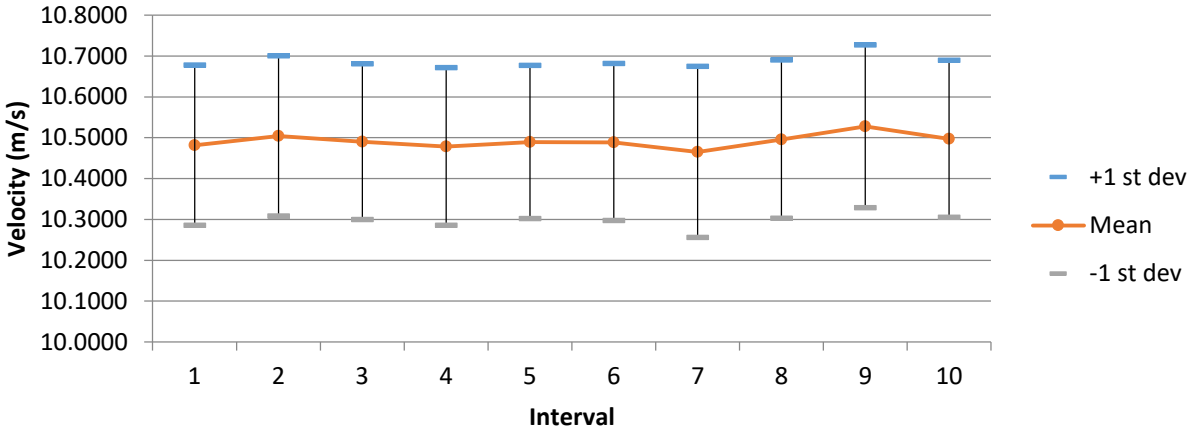
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 212
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: C5
First Sample Date: 23-Aug-13
First Sample Time: 07:56:34.609

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.6549	8.1136	9.7030	0.3018
u	9.6600	6.8500	8.2433	0.2982
v	-2.3500	-6.3400	-5.0719	0.6020
w	0.8800	-1.4100	-0.2077	0.2628

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	10.1234	8.1136	9.1905	0.2411	2.9850
2	10.3484	8.2989	9.4465	0.2820	2.1697
3	10.4619	8.9533	9.6867	0.2102	2.1409
4	10.5923	8.7920	9.7084	0.2078	2.0723
5	10.4469	8.8797	9.7922	0.2029	2.1540
6	10.6549	8.9752	9.7931	0.2109	2.0672
7	10.5090	9.0375	9.8200	0.2030	2.0441
8	10.5463	9.0914	9.8324	0.2010	2.0244
9	10.6522	9.1672	9.8964	0.2003	2.0263
10	10.5135	9.1452	9.8638	0.1999	2.2253
		Average	9.7030	0.2159	2.1909
		St Dev	0.2207	0.0262	0.2724

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.3815	-3.7382	0.0859	0.2754	0.3882	0.2566	3.2857	4.6316	3.0612
2	8.3108	-4.4421	0.0170	0.2612	0.6170	0.2519	3.1435	7.4246	3.0313
3	7.9993	-5.4493	-0.2254	0.2635	0.1958	0.1818	3.2938	2.4472	2.2730
4	8.0046	-5.4671	-0.4181	0.2716	0.1747	0.2317	3.3933	2.1824	2.8950
5	8.3769	-5.0473	-0.3712	0.2379	0.1597	0.2490	2.8401	1.9062	2.9730
6	8.2945	-5.1839	-0.3569	0.2790	0.2027	0.1757	3.3634	2.4441	2.1180
7	8.1678	-5.4414	-0.1696	0.2518	0.1328	0.2045	3.0831	1.6256	2.5032
8	8.1340	-5.5087	-0.3133	0.2546	0.1535	0.1487	3.1296	1.8867	1.8275
9	8.3940	-5.2334	-0.1915	0.2392	0.1270	0.1495	2.8494	1.5131	1.7810
10	8.3694	-5.2074	-0.1345	0.2555	0.2017	0.2167	3.0530	2.4099	2.5893

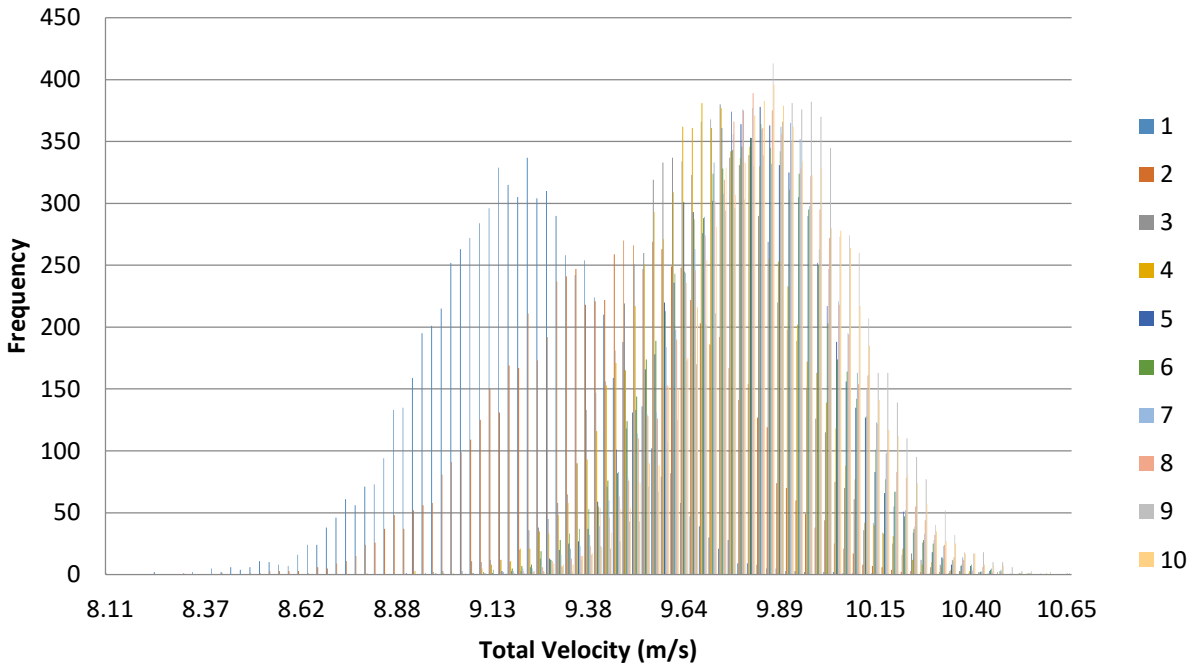


Figure 1. Velocity histogram for each interval (100 bins).

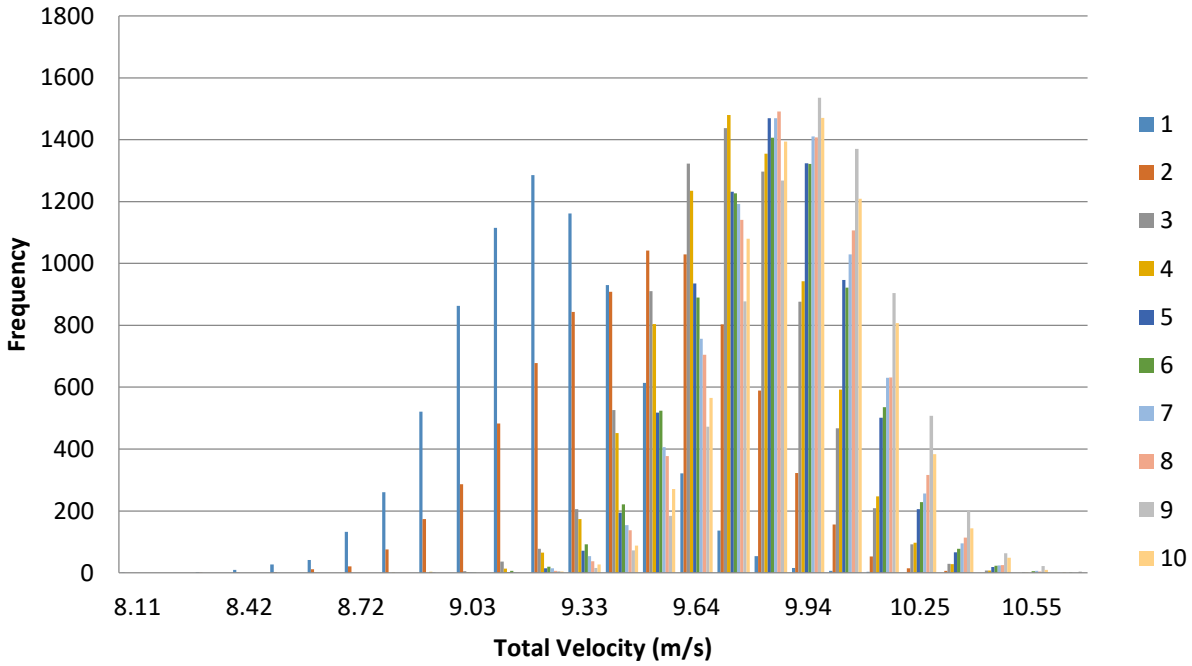
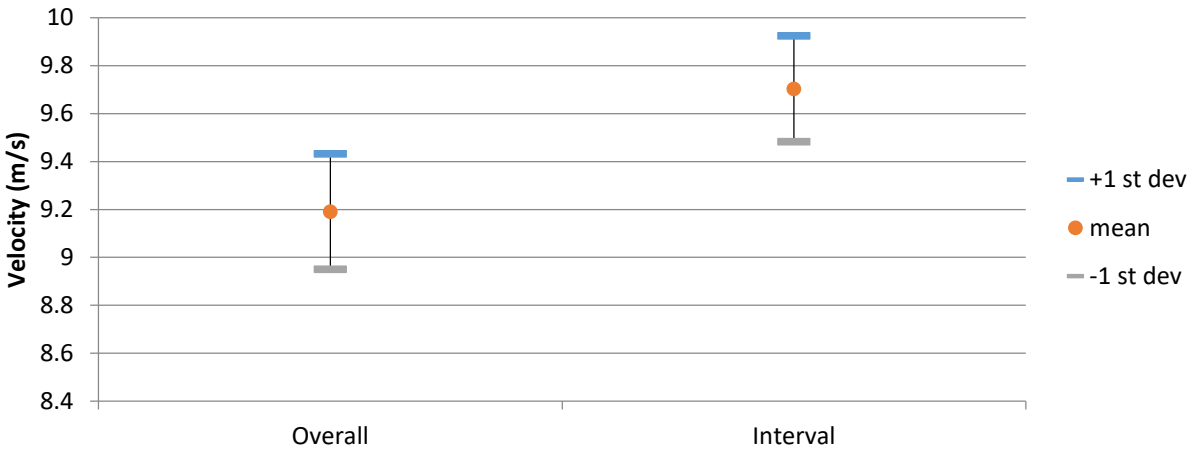
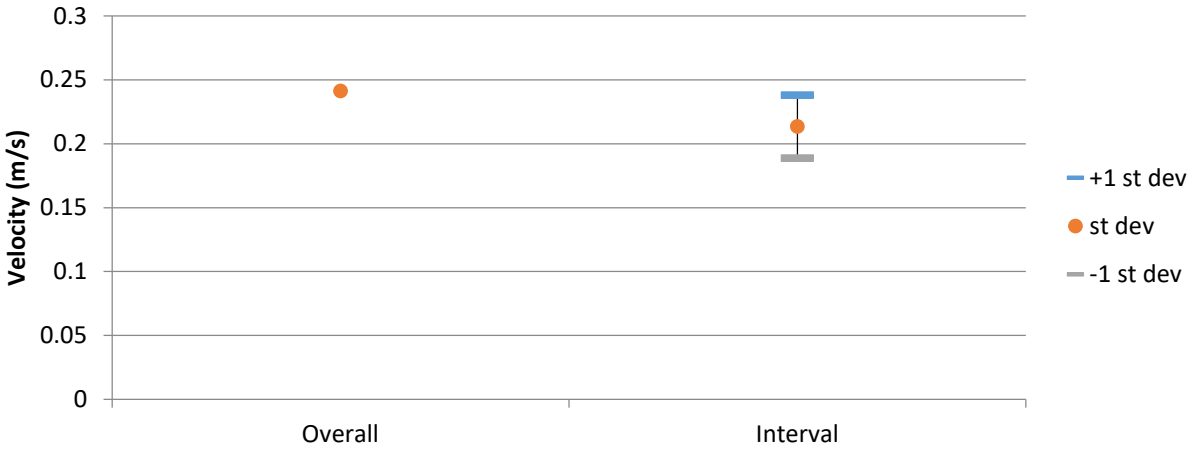


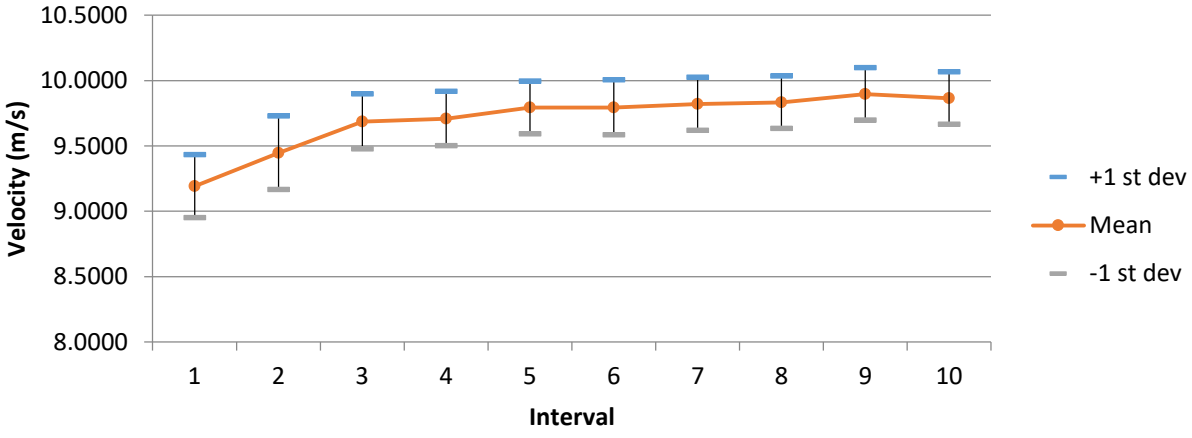
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 213
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: C4
First Sample Date: 23-Aug-13
First Sample Time: 07:58:31.359

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.7577	8.1233	9.5261	0.3329
u	9.8100	6.8700	8.5758	0.3435
v	-2.5400	-5.5200	-4.0528	0.4498
w	0.8410	-2.4700	-0.5478	0.5182

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	10.7577	8.5145	9.6980	0.2994	3.0847
2	10.5126	8.1926	9.5808	0.2955	3.3708
3	10.6731	8.3289	9.4808	0.3196	3.7178
4	10.5993	8.4246	9.5151	0.3537	3.9815
5	10.7440	8.2439	9.5354	0.3796	3.3518
6	10.4215	8.3240	9.4924	0.3182	3.4172
7	10.5142	8.3662	9.3923	0.3210	3.2797
8	10.4970	8.5090	9.5308	0.3126	3.3935
9	10.5189	8.1233	9.5404	0.3238	3.2972
10	10.4672	8.3515	9.4954	0.3131	3.3974
		Average	9.5261	0.3236	3.4291
		St Dev	0.0782	0.0252	0.2364

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.3574	-4.8698	-0.6096	0.3398	0.2135	0.2170	4.0654	2.5552	2.5964
2	8.5575	-4.2307	-0.7298	0.3110	0.2452	0.2432	3.6347	2.8651	2.8420
3	8.6668	-3.8076	-0.2913	0.3309	0.2958	0.3074	3.8184	3.4129	3.5467
4	8.6012	-4.0489	-0.1346	0.3680	0.2954	0.2146	4.2782	3.4346	2.4950
5	8.6729	-3.8232	-0.6154	0.3279	0.4038	0.7633	3.7812	4.6555	8.8005
6	8.5789	-3.9063	-0.9781	0.3284	0.3518	0.4033	3.8282	4.1005	4.7016
7	8.6175	-3.6340	-0.7577	0.3238	0.2783	0.3069	3.7572	3.2296	3.5613
8	8.5165	-4.2114	-0.4713	0.3245	0.3110	0.4936	3.8105	3.6512	5.7962
9	8.6439	-3.8889	-0.8468	0.3274	0.3235	0.5957	3.7871	3.7424	6.8918
10	8.5453	-4.1069	-0.0438	0.3363	0.3362	0.3801	3.9354	3.9341	4.4482

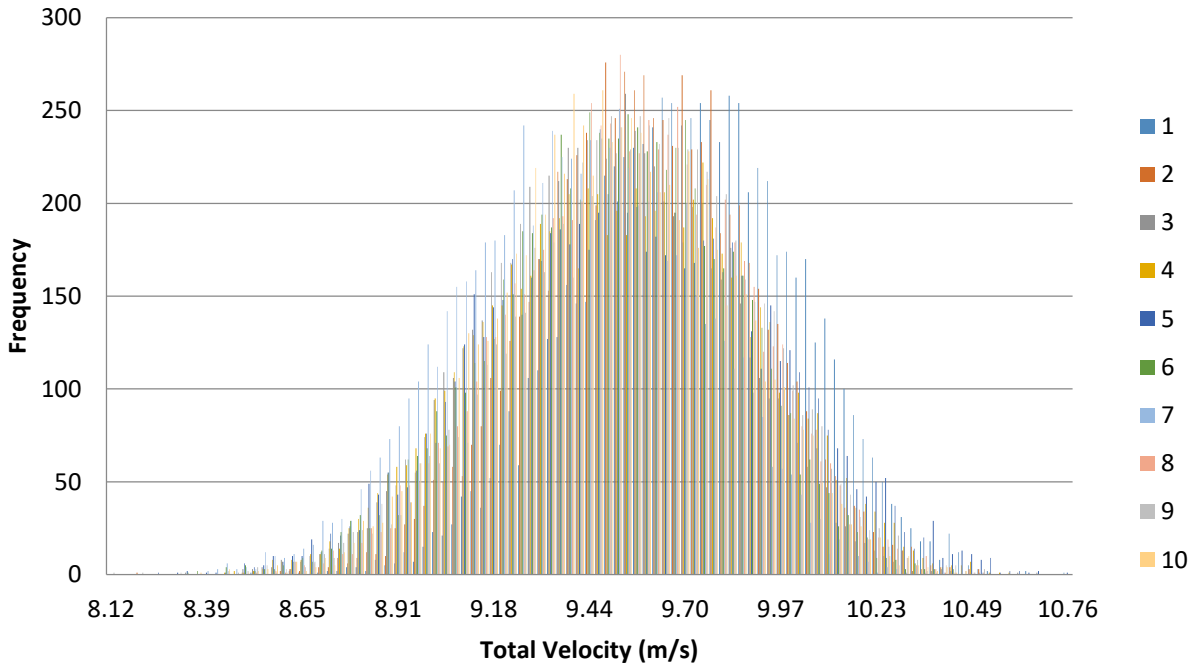


Figure 1. Velocity histogram for each interval (100 bins).

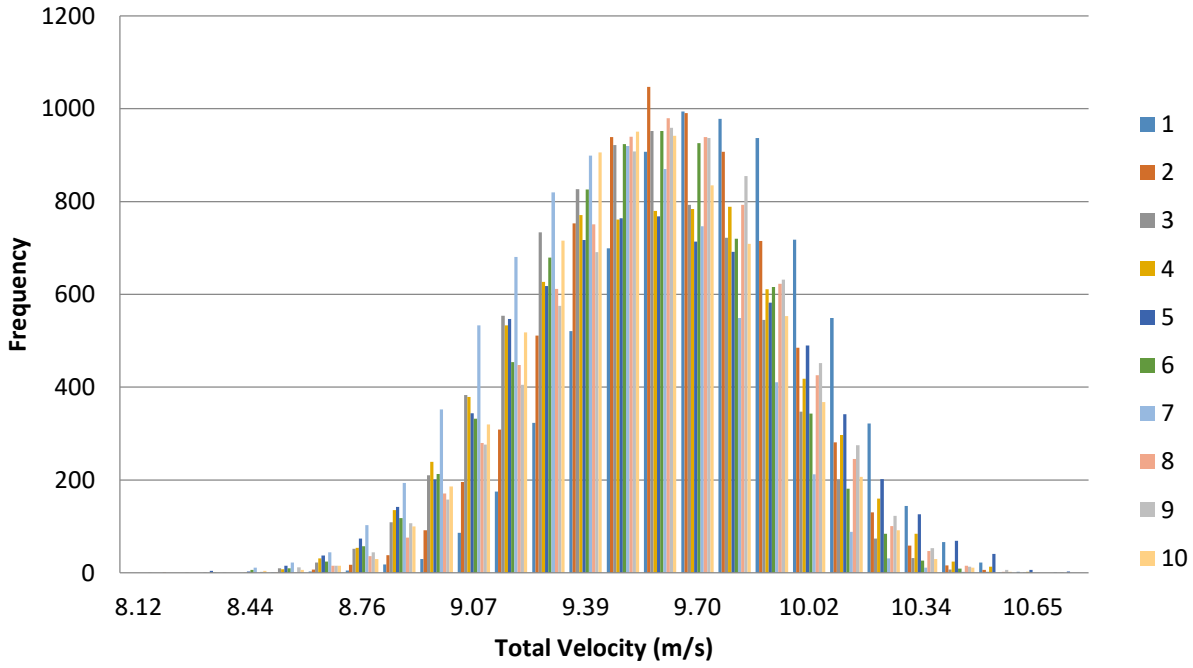
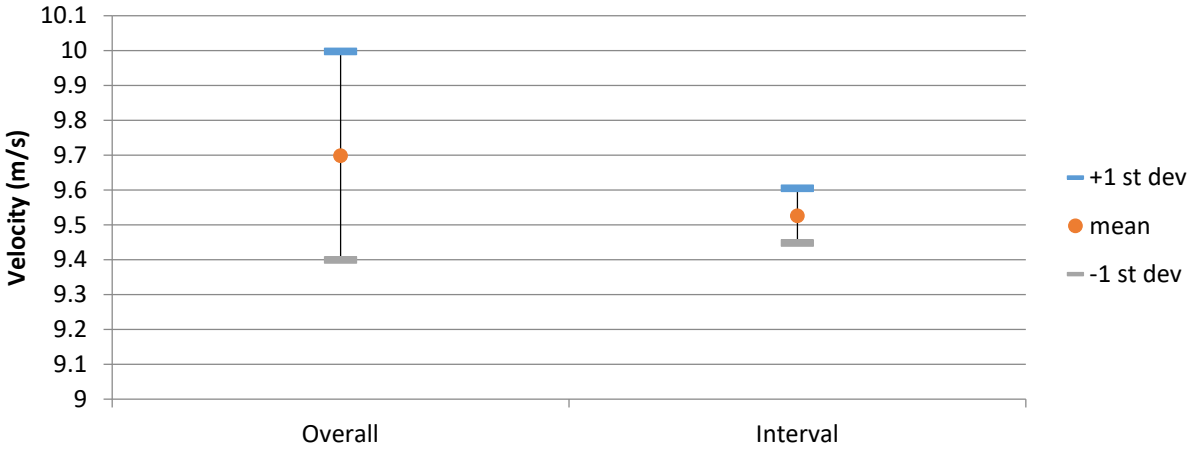
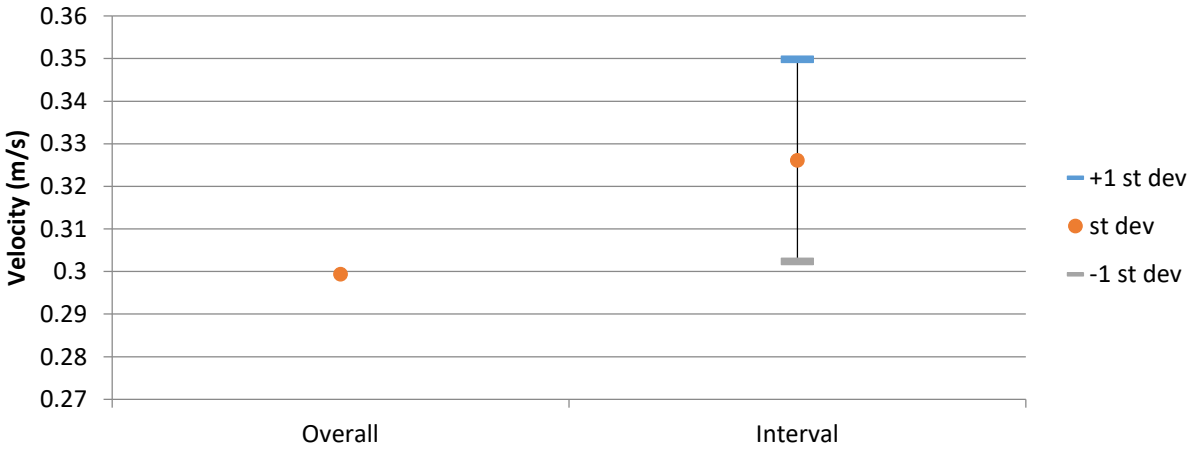


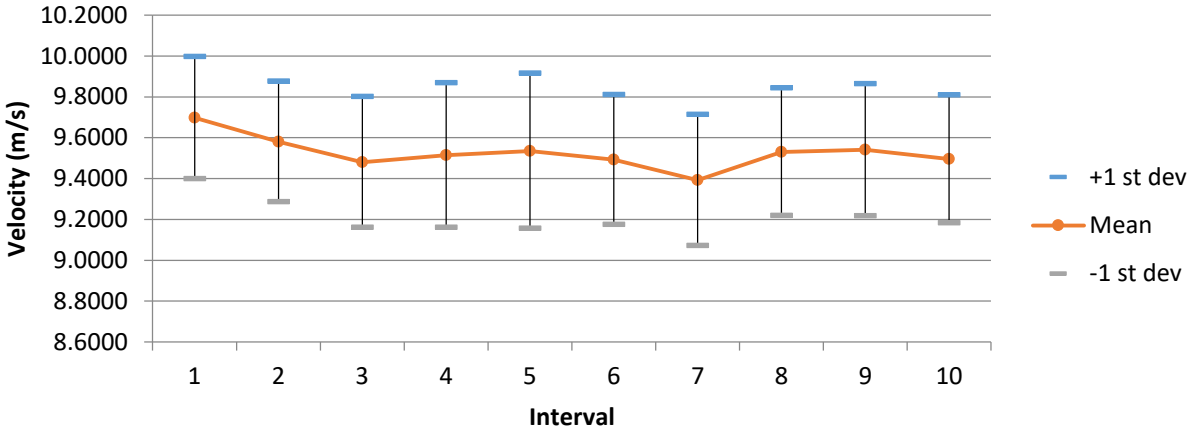
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 214
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: C3
First Sample Date: 23-Aug-13
First Sample Time: 08:00:18.687

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.2571	8.8686	10.3143	0.4203
u	10.2000	7.9900	9.1560	0.2663
v	-2.0600	-6.3100	-4.3403	0.6187
w	0.0409	-4.0600	-1.7651	0.5669

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	12.1064	9.7463	10.9087	0.3384	3.3750
2	12.2571	9.6255	10.6523	0.3595	2.5281
3	11.3736	9.5144	10.4991	0.2654	2.7559
4	11.5727	9.1730	10.5376	0.2904	3.0160
5	11.3838	9.0454	10.1289	0.3055	2.9704
6	11.2488	9.2092	10.1067	0.3002	3.0166
7	11.2392	9.0411	10.0802	0.3041	2.5964
8	10.9757	8.8686	10.0291	0.2604	2.9672
9	11.2683	9.1962	10.1486	0.3011	2.6786
10	11.0824	9.1730	10.0519	0.2693	2.9031
		Average	10.3143	0.2994	2.8807
		St Dev	0.3094	0.0314	0.2364

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.2689	-5.2829	-2.2480	0.2635	0.3021	0.2782	2.8426	3.2597	3.0013
2	9.1680	-4.8825	-2.3113	0.2527	0.4772	0.2750	2.7564	5.2054	2.9993
3	9.2900	-4.4759	-1.9511	0.2095	0.2361	0.2377	2.2553	2.5413	2.5584
4	9.2705	-4.5530	-2.0430	0.2215	0.2962	0.3771	2.3896	3.1951	4.0675
5	9.0158	-4.4154	-1.2259	0.2596	0.3808	0.4386	2.8796	4.2242	4.8650
6	8.9454	-4.4680	-1.4018	0.2213	0.3260	0.3643	2.4740	3.6444	4.0722
7	9.0395	-4.1372	-1.5408	0.2452	0.3175	0.5809	2.7125	3.5127	6.4259
8	9.1958	-3.4969	-1.7340	0.2887	0.4777	0.7367	3.1394	5.1949	8.0115
9	9.2252	-3.7769	-1.7973	0.2237	0.3958	0.5276	2.4254	4.2909	5.7190
10	9.1411	-3.9145	-1.3971	0.2120	0.3298	0.3532	2.3192	3.6080	3.8634

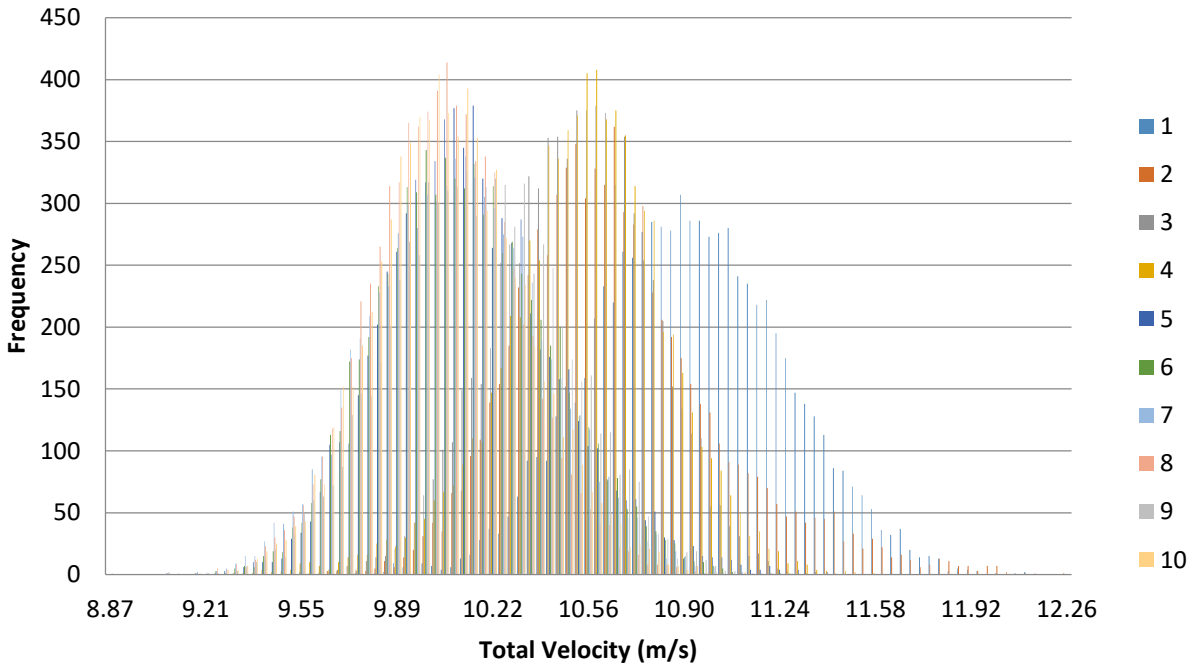


Figure 1. Velocity histogram for each interval (100 bins).

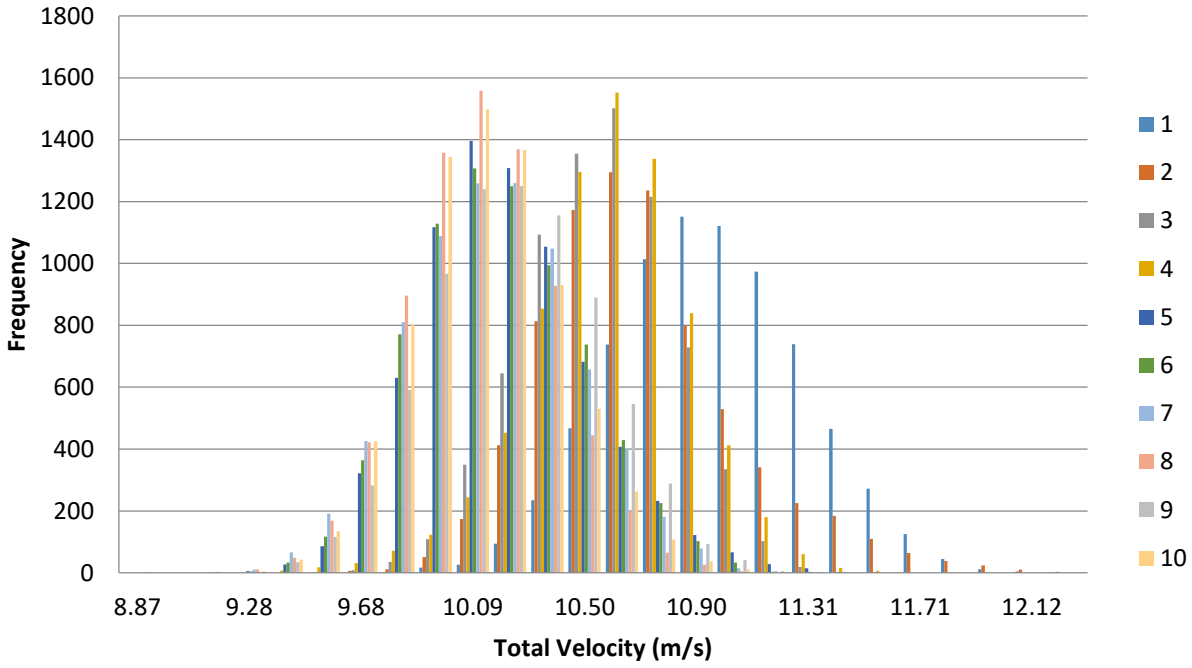
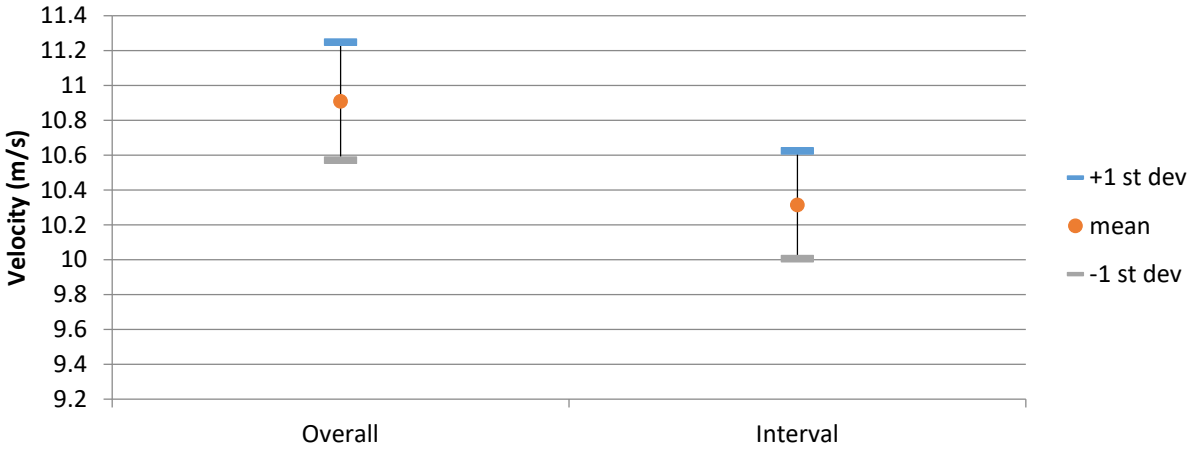
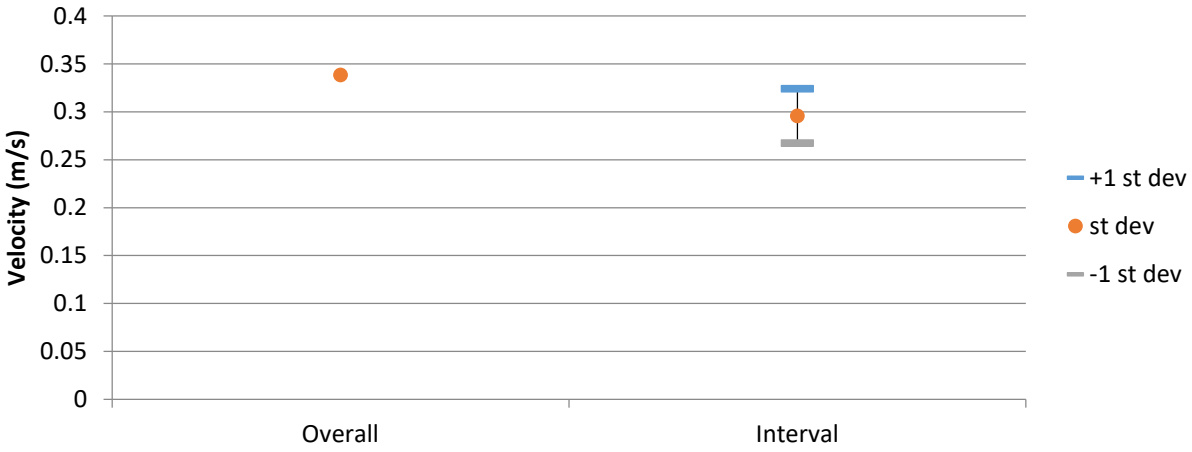


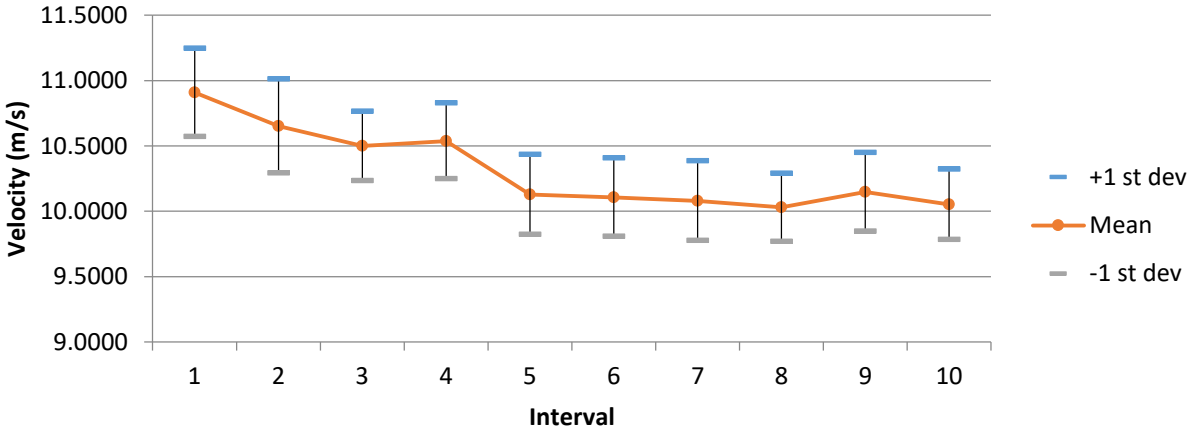
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 215
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: C2
First Sample Date: 23-Aug-13
First Sample Time: 08:02:51.171

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.9119	9.5937	10.8409	0.3089
u	10.7000	8.1400	9.5294	0.2990
v	-2.5100	-5.6300	-4.0739	0.4821
w	-1.8700	-4.5000	-3.1288	0.3218

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.7676	9.8537	10.9209	0.2791	2.2405
2	11.9119	9.8906	11.0482	0.2475	2.1922
3	11.8014	10.1705	11.0370	0.2420	2.7936
4	11.8439	9.5937	10.7300	0.2998	2.3190
5	11.5444	9.8454	10.6388	0.2467	3.1066
6	11.7568	9.7033	10.6788	0.3317	2.8841
7	11.8995	9.8883	10.8455	0.3128	2.8848
8	11.7725	9.6011	10.8676	0.3135	2.2513
9	11.6819	10.0464	10.8806	0.2450	2.3445
10	11.5701	9.8165	10.7618	0.2523	2.5555
		Average	10.8409	0.2770	2.5572
		St Dev	0.1398	0.0346	0.3164

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.6135	-4.0463	-3.1756	0.3314	0.4144	0.4317	3.4475	4.3109	4.4902
2	9.4859	-4.7122	-3.1171	0.2583	0.3141	0.2351	2.7229	3.3113	2.4782
3	9.5851	-4.4372	-3.1727	0.2661	0.3518	0.2212	2.7757	3.6706	2.3079
4	9.5343	-3.8389	-3.0505	0.3109	0.3733	0.2065	3.2613	3.9156	2.1659
5	9.5834	-3.5550	-2.9256	0.2857	0.2119	0.2797	2.9813	2.2109	2.9190
6	9.5815	-3.7906	-2.7315	0.2910	0.5609	0.3360	3.0367	5.8539	3.5066
7	9.3976	-4.2330	-3.3303	0.2993	0.4651	0.3075	3.1852	4.9492	3.2723
8	9.4954	-4.1215	-3.2856	0.3096	0.3540	0.1944	3.2600	3.7279	2.0470
9	9.5178	-4.0946	-3.3072	0.2754	0.2154	0.1817	2.8932	2.2626	1.9092
10	9.4998	-3.9095	-3.1914	0.2919	0.2075	0.1890	3.0731	2.1844	1.9893

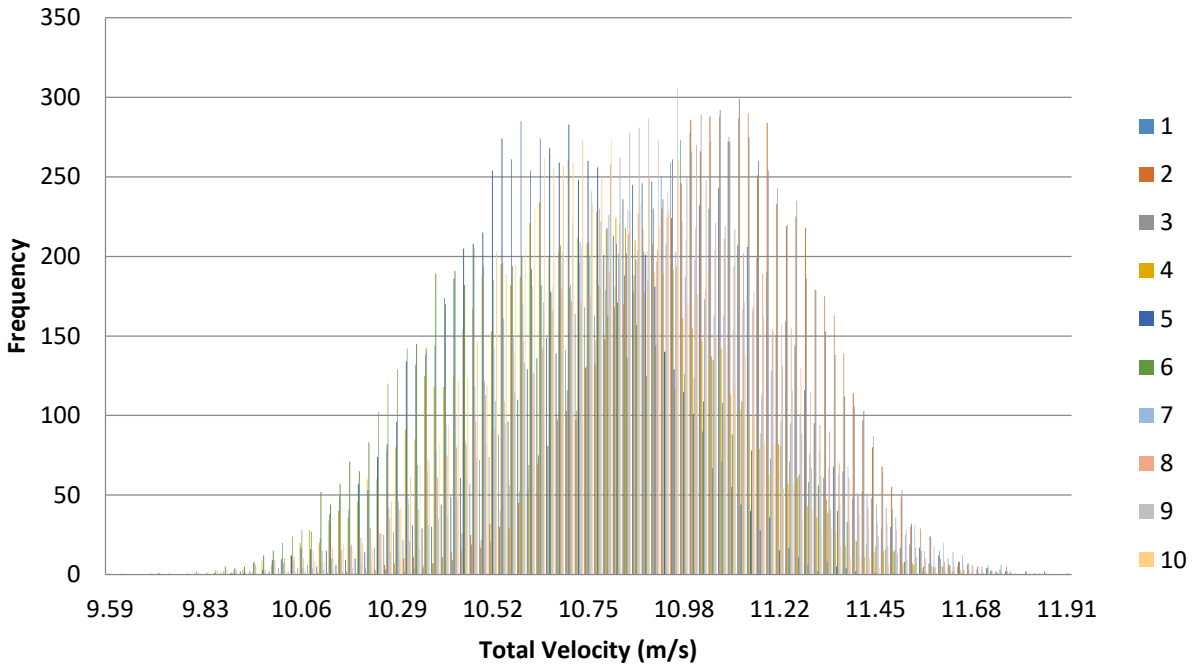


Figure 1. Velocity histogram for each interval (100 bins).

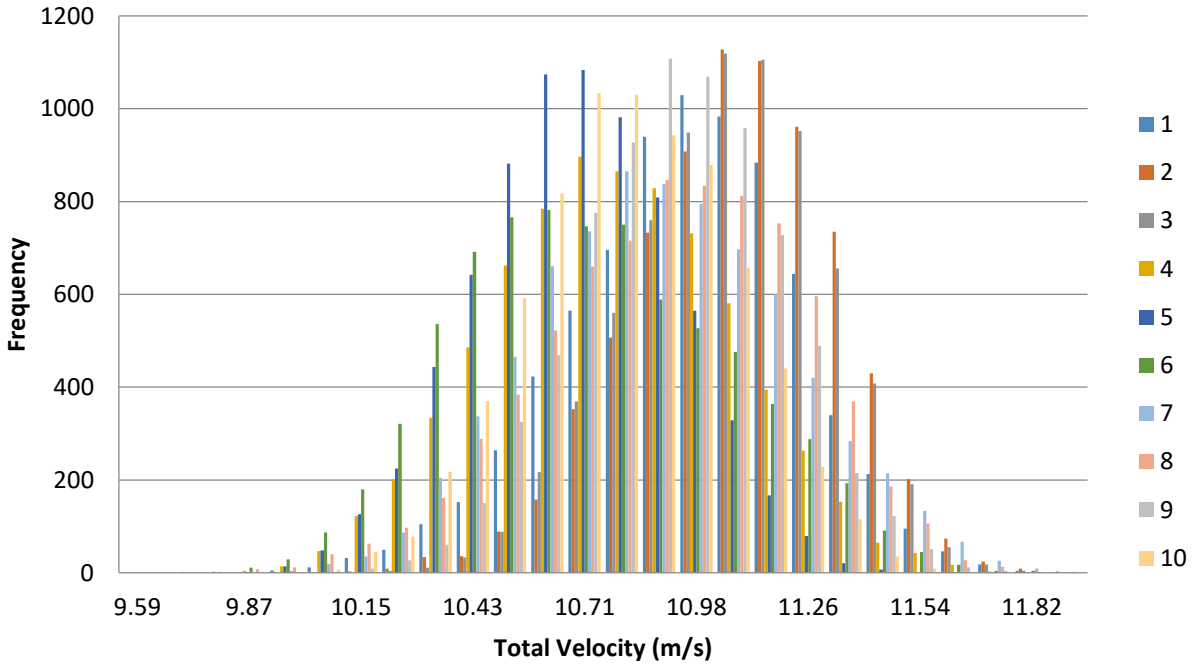
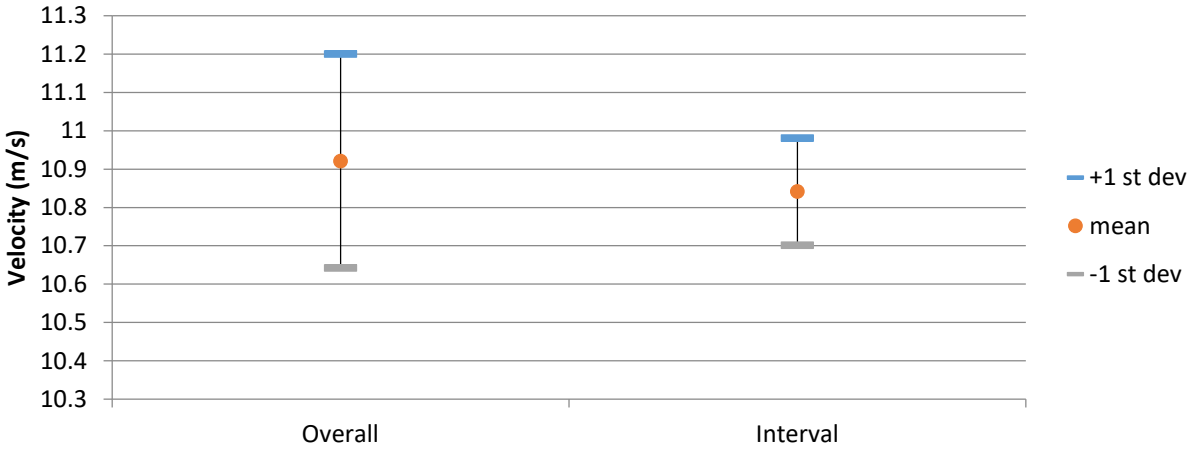
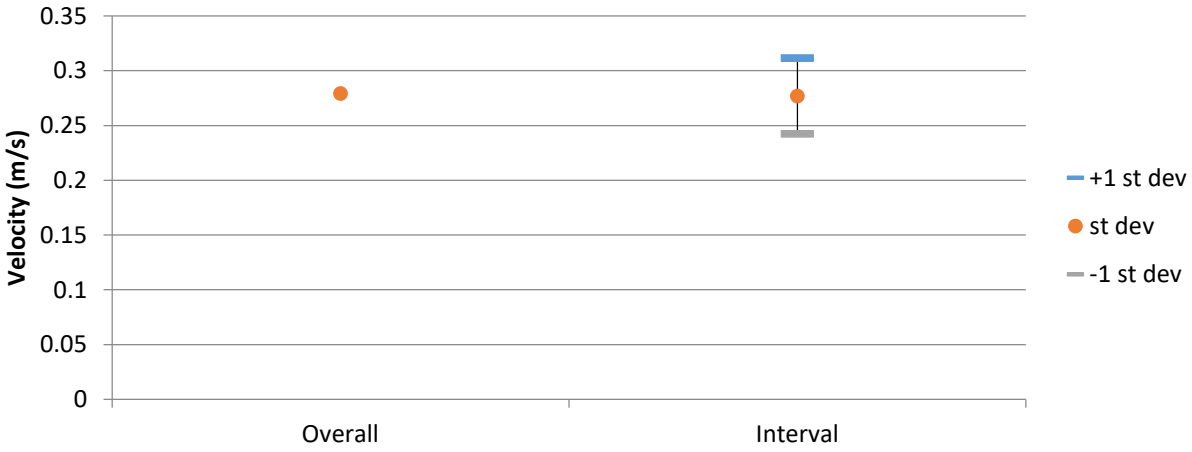


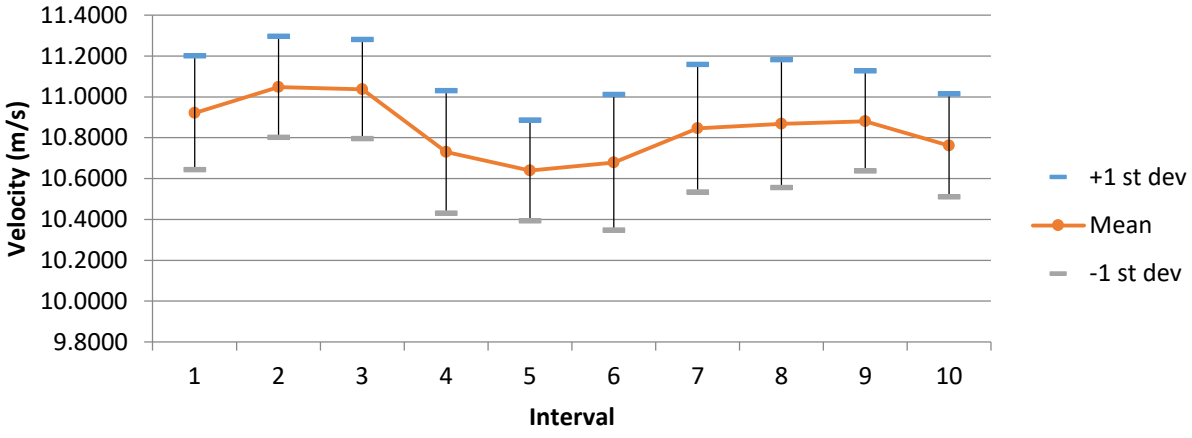
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 216
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 23-Aug-13
First Sample Time: 08:05:30.781

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.7552	10.3458	11.0530	0.1688
u	11.4000	9.9700	10.7642	0.1701
v	0.6690	-1.9400	-0.6988	0.3551
w	-1.1300	-3.8500	-2.3501	0.4039

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.6541	10.4325	11.1011	0.1684	1.7072
2	11.7552	10.4436	11.0848	0.1892	1.3817
3	11.6156	10.5302	11.0256	0.1523	1.4437
4	11.6212	10.4060	11.0504	0.1595	1.4406
5	11.6207	10.3461	11.0649	0.1594	1.4527
6	11.6109	10.4652	11.0901	0.1611	1.5934
7	11.6929	10.4143	11.0264	0.1757	1.4938
8	11.6205	10.4079	11.0006	0.1643	1.4258
9	11.6030	10.4167	11.0669	0.1578	1.5097
10	11.5549	10.3458	11.0197	0.1664	1.4966
		Average	11.0531	0.1654	1.4945
		St Dev	0.0339	0.0106	0.0894

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.8305	-0.3173	-2.3851	0.1515	0.2479	0.2967	1.3990	2.2889	2.7399
2	10.6370	-1.0633	-2.8831	0.1506	0.3414	0.4249	1.4154	3.2093	3.9949
3	10.7021	-1.0315	-2.4144	0.1543	0.1889	0.3151	1.4418	1.7651	2.9444
4	10.8348	-1.0233	-1.8796	0.1644	0.2948	0.2256	1.5171	2.7213	2.0821
5	10.8349	-0.7020	-2.0884	0.1650	0.1977	0.3748	1.5232	1.8250	3.4596
6	10.7336	-0.6139	-2.6842	0.1520	0.3391	0.2938	1.4158	3.1592	2.7375
7	10.7347	-0.5499	-2.4128	0.1577	0.2845	0.3862	1.4692	2.6499	3.5975
8	10.7530	-0.7149	-2.1957	0.1662	0.1836	0.1397	1.5457	1.7070	1.2990
9	10.8003	-0.4926	-2.3516	0.1559	0.1886	0.1465	1.4438	1.7463	1.3560
10	10.7813	-0.4799	-2.2061	0.1668	0.2045	0.2372	1.5473	1.8971	2.2005

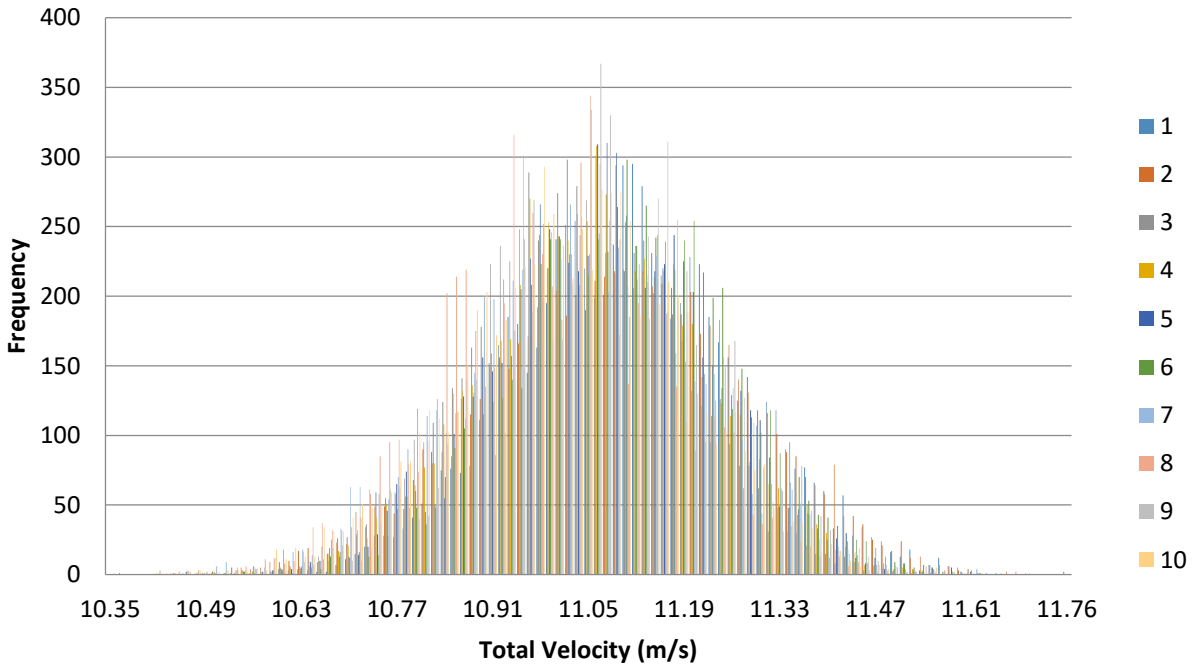


Figure 1. Velocity histogram for each interval (100 bins).

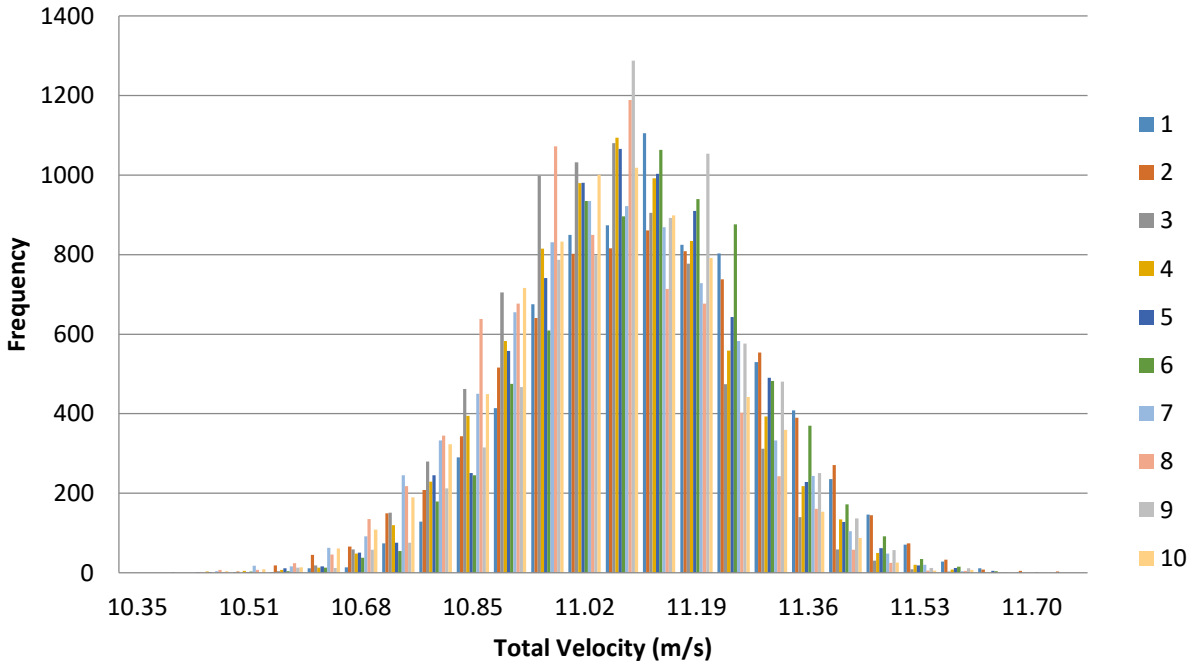
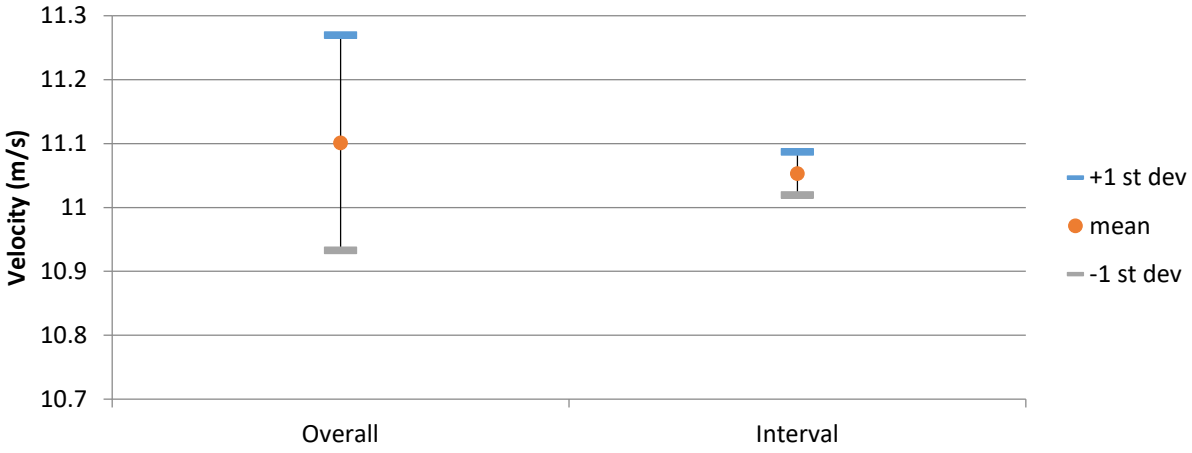
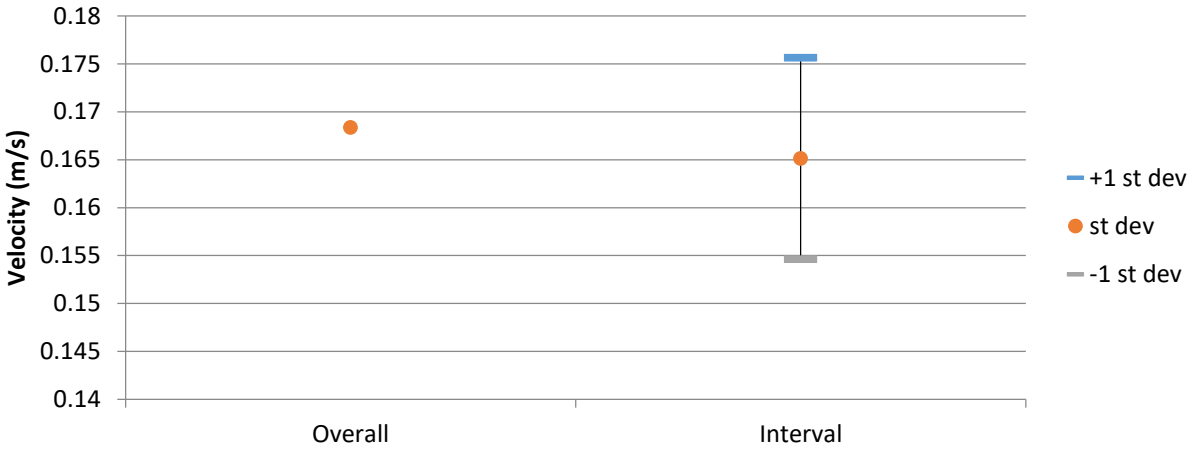


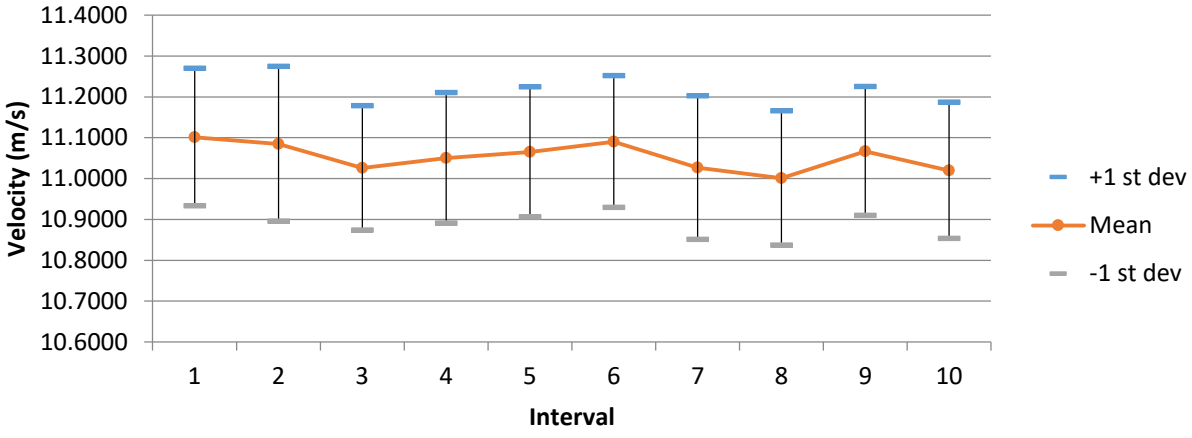
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 217
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: D3
First Sample Date: 23-Aug-13
First Sample Time: 08:07:22.296

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.6343	9.9120	10.8238	0.2110
u	11.0000	9.4900	10.2894	0.1805
v	-1.2700	-3.6300	-2.4161	0.3318
w	-1.1500	-3.4900	-2.2786	0.3967

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.5727	9.9704	10.8001	0.2067	1.7593
2	11.5280	10.0887	10.8213	0.1904	1.8427
3	11.6343	9.9769	10.9330	0.2015	1.7879
4	11.6049	10.1885	10.9369	0.1955	1.9040
5	11.5684	10.1092	10.8391	0.2064	1.8227
6	11.4938	10.0157	10.8134	0.1971	1.8714
7	11.5605	9.9659	10.7827	0.2018	1.9659
8	11.5155	9.9556	10.7638	0.2116	1.9030
9	11.5752	9.9895	10.8254	0.2060	1.7960
10	11.5026	9.9120	10.7227	0.1926	1.8566
		Average	10.8238	0.2010	1.8510
		St Dev	0.0676	0.0069	0.0596

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.3269	-2.4805	-1.9319	0.1828	0.2086	0.2796	1.7702	2.0204	2.7071
2	10.3329	-2.2408	-2.2750	0.1695	0.2689	0.2634	1.6404	2.6020	2.5493
3	10.2890	-2.4175	-2.7646	0.1852	0.3276	0.2784	1.7997	3.1839	2.7060
4	10.2339	-2.8297	-2.6041	0.1793	0.2340	0.2144	1.7521	2.2868	2.0951
5	10.2538	-2.6948	-2.2213	0.1814	0.3053	0.2560	1.7693	2.9773	2.4970
6	10.2917	-2.3582	-2.3119	0.1782	0.2773	0.1879	1.7314	2.6947	1.8262
7	10.2912	-2.3836	-2.1342	0.1734	0.1885	0.3089	1.6853	1.8312	3.0016
8	10.3188	-2.2042	-2.0768	0.1821	0.2972	0.3674	1.7647	2.8806	3.5602
9	10.2807	-2.1300	-2.6090	0.1770	0.2813	0.2923	1.7219	2.7365	2.8428
10	10.2746	-2.4215	-1.8566	0.1712	0.1871	0.2650	1.6659	1.8208	2.5796

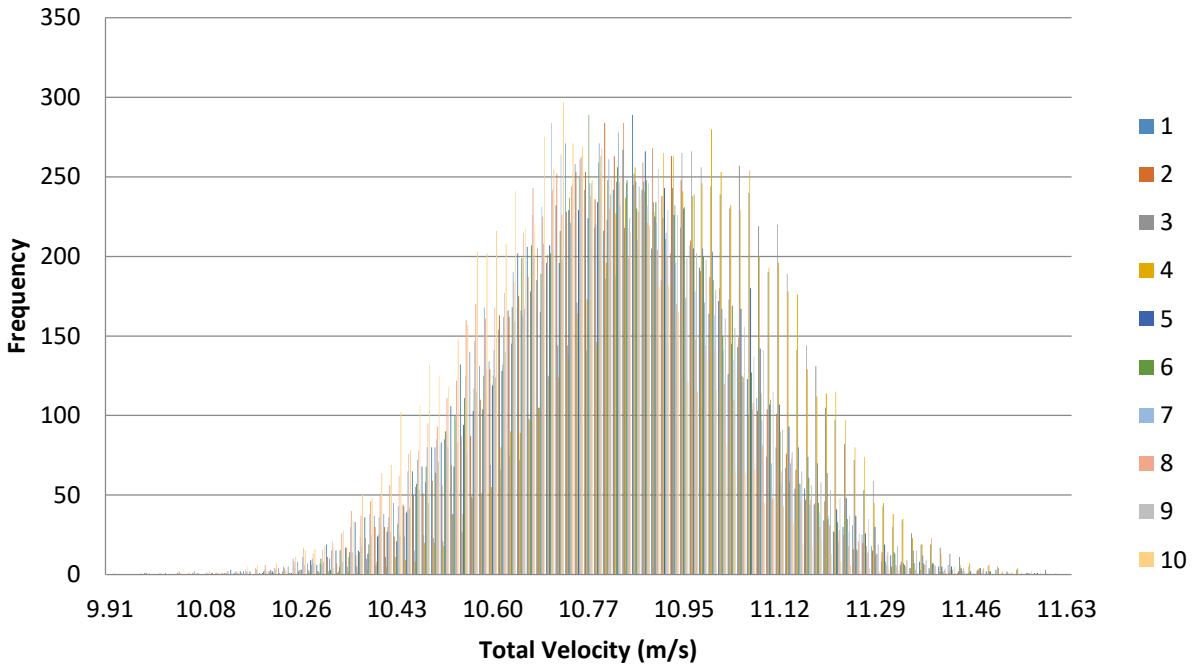


Figure 1. Velocity histogram for each interval (100 bins).

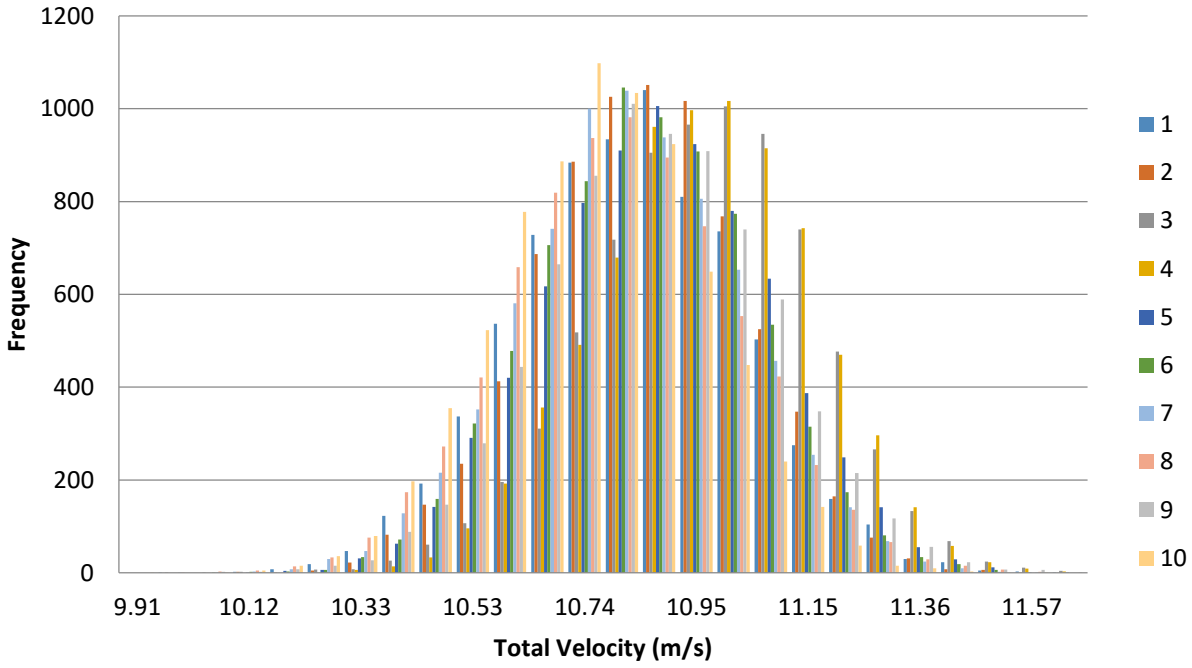
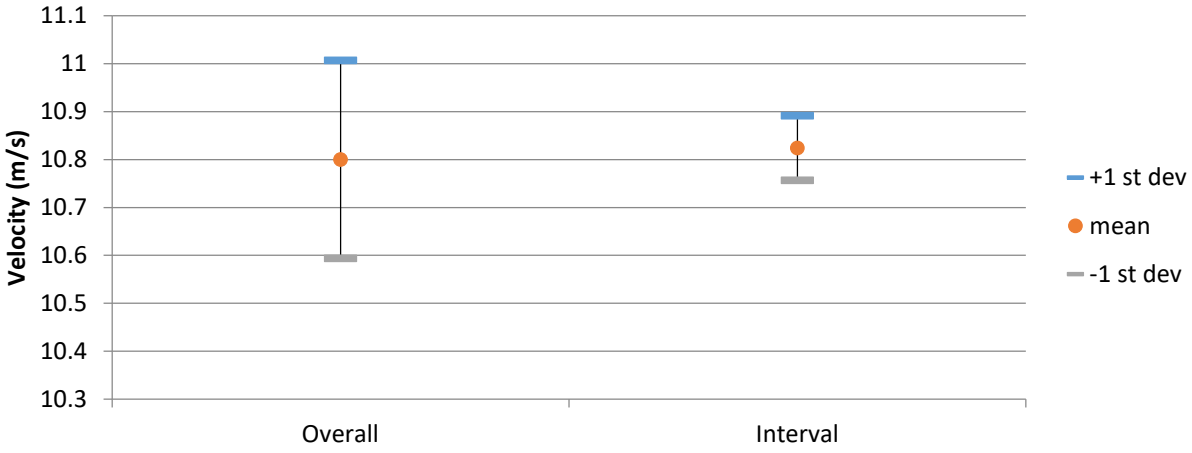
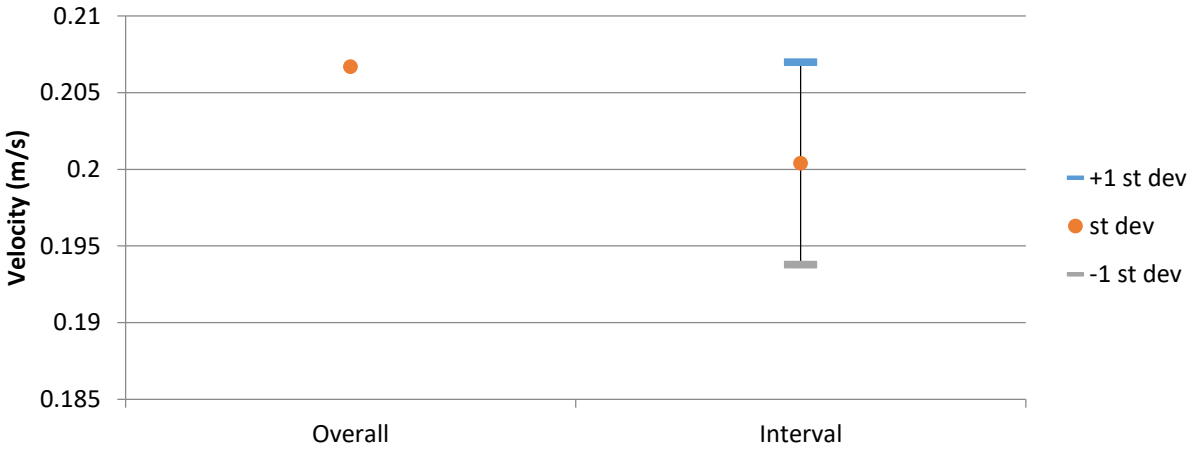


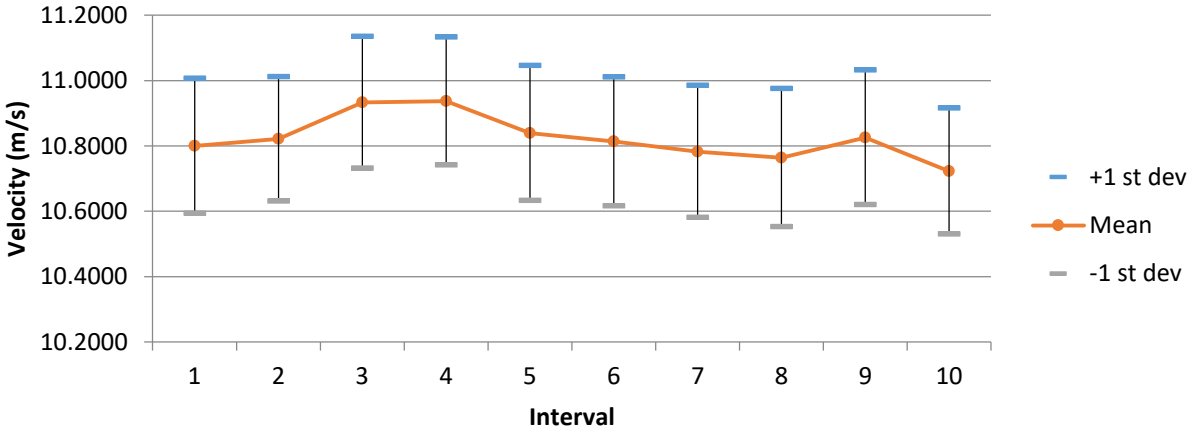
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 218
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: B3
First Sample Date: 23-Aug-13
First Sample Time: 08:09:48.906

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.7806	7.3874	8.9310	0.4284
u	8.7300	5.5600	7.3247	0.4015
v	-3.7200	-6.5200	-4.9855	0.3306
w	0.0684	-2.3700	-1.0145	0.3749

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	10.7806	7.8715	9.1526	0.3916	4.1553
2	10.3925	7.7804	8.9551	0.3721	4.3728
3	10.3452	7.8284	9.0259	0.3947	4.4725
4	10.2722	7.5099	8.9464	0.4001	4.2131
5	10.3669	7.5844	8.9050	0.3752	4.1593
6	9.8693	7.5152	8.7799	0.3652	4.2737
7	10.1439	7.5623	8.8947	0.3801	4.3487
8	10.1700	7.3874	8.6484	0.3761	3.9975
9	10.0471	7.5521	8.7289	0.3489	5.1105
10	10.6783	7.5029	9.2731	0.4739	4.3421
		Average	8.9310	0.3878	4.3445
		St Dev	0.1890	0.0337	0.2858

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	7.4273	-5.2584	-0.9016	0.3725	0.2658	0.2930	5.0146	3.5787	3.9443
2	7.1997	-5.2594	-0.7717	0.3285	0.2282	0.2846	4.5629	3.1698	3.9527
3	7.4838	-4.9175	-1.0393	0.3512	0.2258	0.4229	4.6927	3.0170	5.6507
4	7.4059	-4.8666	-1.1775	0.3439	0.2758	0.2953	4.6433	3.7237	3.9879
5	7.4354	-4.7347	-1.2199	0.3192	0.2387	0.3015	4.2935	3.2107	4.0548
6	7.3212	-4.7157	-1.0393	0.3636	0.2529	0.3253	4.9669	3.4547	4.4434
7	7.3227	-4.9099	-1.1172	0.3447	0.3140	0.2547	4.7069	4.2874	3.4777
8	6.8438	-5.2207	-0.7554	0.3601	0.2586	0.2780	5.2612	3.7779	4.0617
9	7.2075	-4.8412	-0.8183	0.3473	0.2324	0.2912	4.8192	3.2240	4.0403
10	7.5994	-5.1310	-1.3052	0.3608	0.3097	0.4546	4.7471	4.0756	5.9827

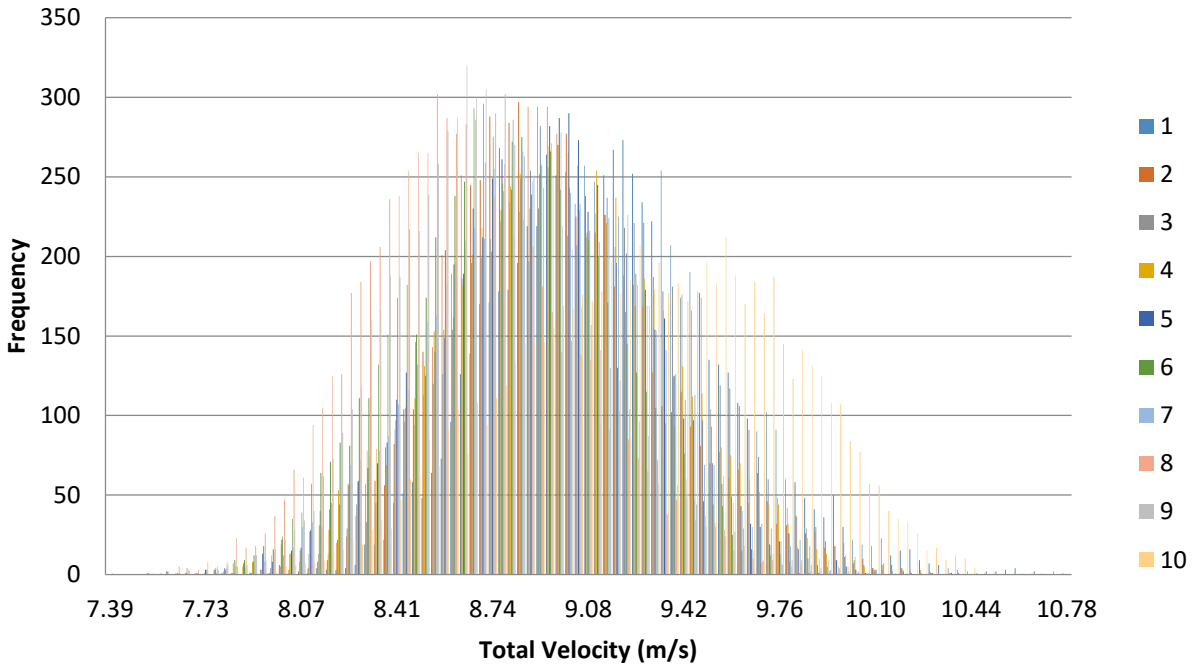


Figure 1. Velocity histogram for each interval (100 bins).

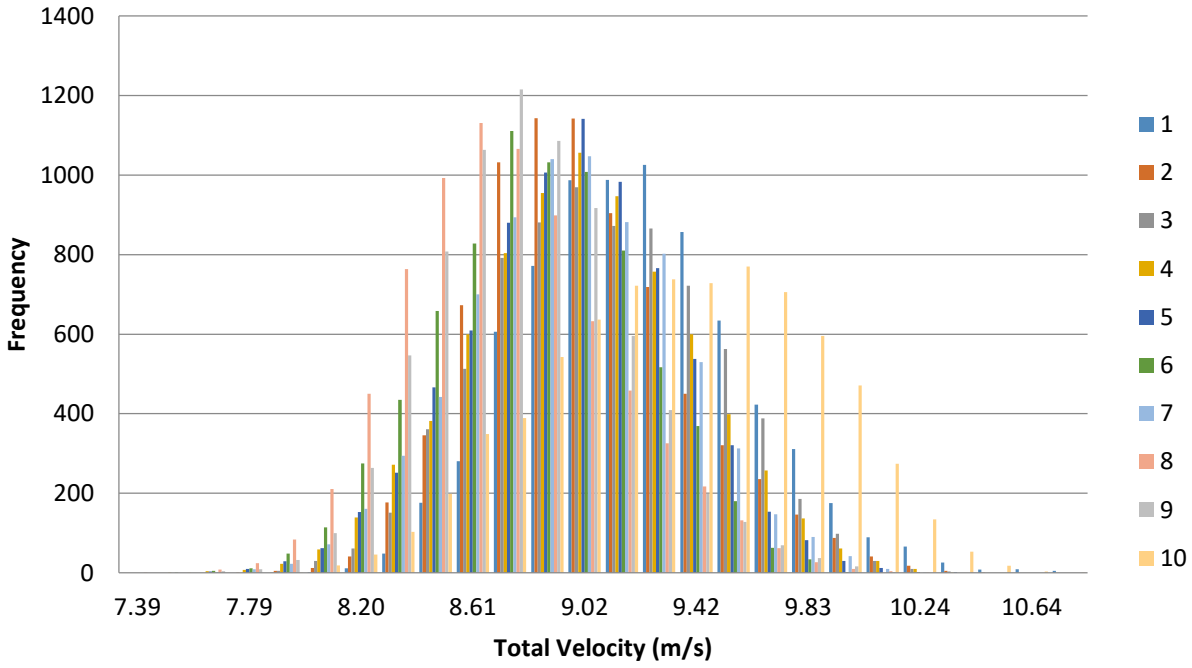
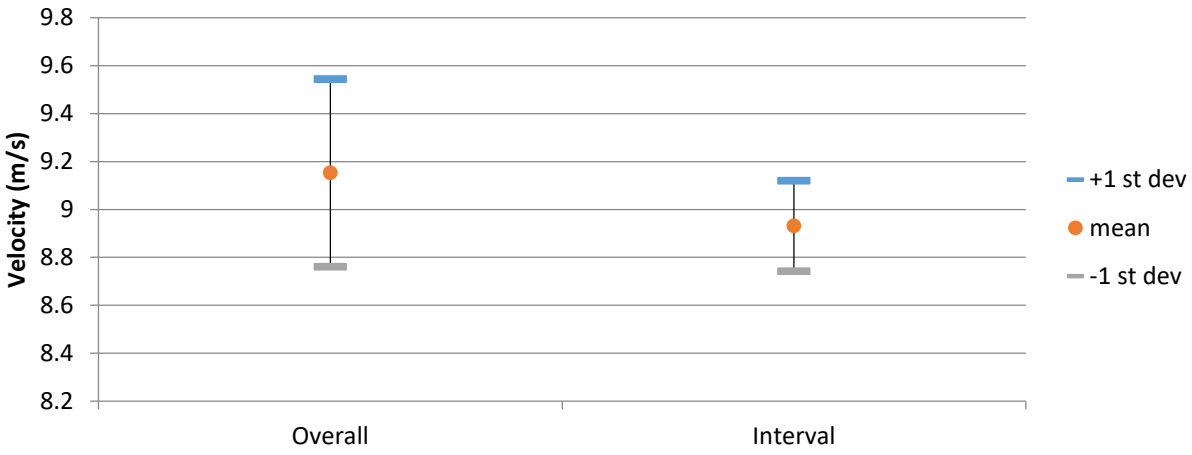
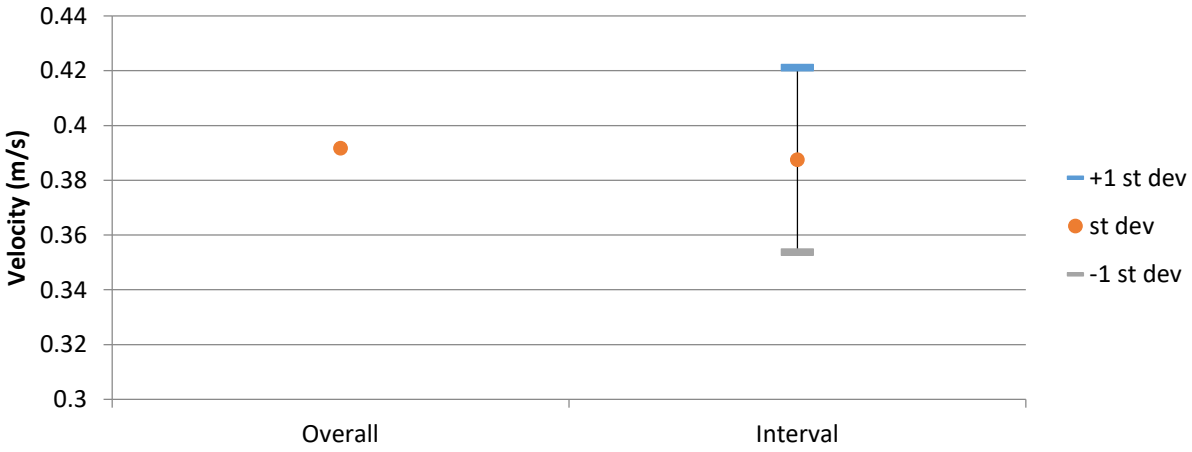


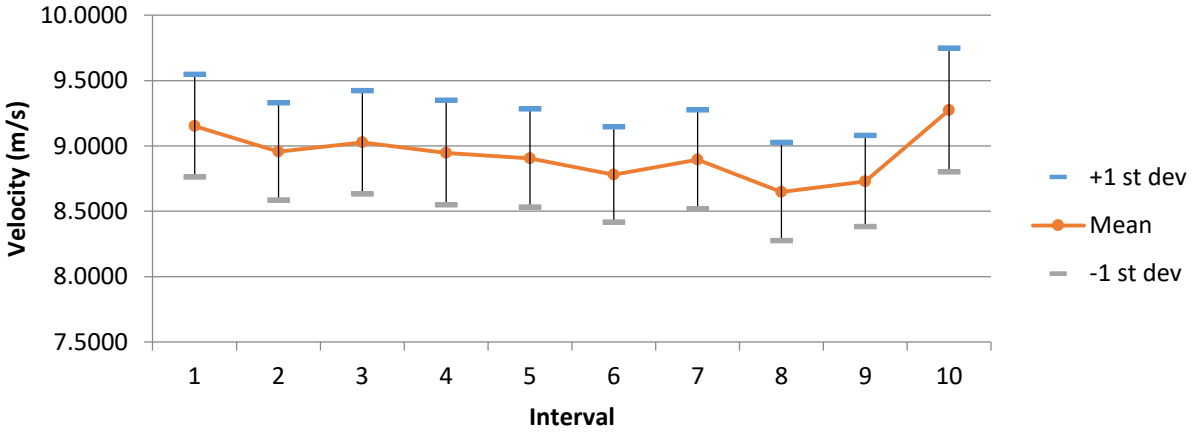
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 219
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: A3
First Sample Date: 23-Aug-13
First Sample Time: 08:11:57.328

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.6727	7.1937	9.1083	0.6544
u	8.9200	5.3100	6.8802	0.5504
v	-4.4800	-7.7600	-5.8449	0.4286
w	0.5820	-2.7300	-1.0688	0.5109

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	11.6727	7.9606	9.9421	0.6000	6.0352	8	0.06 %
2	10.6823	7.6840	9.2722	0.4826	5.2050	0	0.00 %
3	10.4601	7.4862	9.0149	0.4836	5.3642	0	0.00 %
4	10.1491	7.5046	8.6081	0.4428	5.1442	0	0.00 %
5	10.2405	7.4845	8.6740	0.5224	6.0229	0	0.00 %
6	10.3742	7.1937	8.8128	0.6032	6.8445	0	0.00 %
7	10.7626	7.8370	9.0173	0.5420	6.0102	0	0.00 %
8	11.1643	7.9897	8.8831	0.3901	4.3911	24	0.19 %
9	10.9775	8.0324	9.3396	0.5756	6.1629	0	0.00 %
10	11.1356	8.1183	9.5190	0.5548	5.8280	0	0.00 %
		Average	9.1083	0.5197	5.7008		
		St dev	0.3922	0.0661	0.6507		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	7.4836	-6.3310	-1.5241	0.5841	0.4110	0.5349	7.8051	5.4923	7.1474
2	7.1352	-5.7953	-1.1631	0.4282	0.2701	0.3191	6.0019	3.7861	4.4718
3	6.9482	-5.6148	-1.1636	0.3933	0.2944	0.3213	5.6608	4.2370	4.6249
4	6.5326	-5.5138	-0.9405	0.4150	0.2660	0.3017	6.3524	4.0723	4.6181
5	6.6010	-5.5272	-0.9705	0.4462	0.2904	0.4049	6.7603	4.3991	6.1340
6	6.7395	-5.5373	-1.1561	0.4590	0.4275	0.4648	6.8104	6.3425	6.8963
7	6.8224	-5.7740	-1.0620	0.4847	0.3024	0.5157	7.1049	4.4326	7.5595
8	6.4671	-6.0474	-0.4678	0.3903	0.2592	0.4776	6.0357	4.0084	7.3856
9	6.9312	-6.1478	-1.0402	0.4838	0.3169	0.5529	6.9807	4.5727	7.9763
10	7.1399	-6.1616	-1.1986	0.5005	0.2758	0.4602	7.0105	3.8634	6.4451

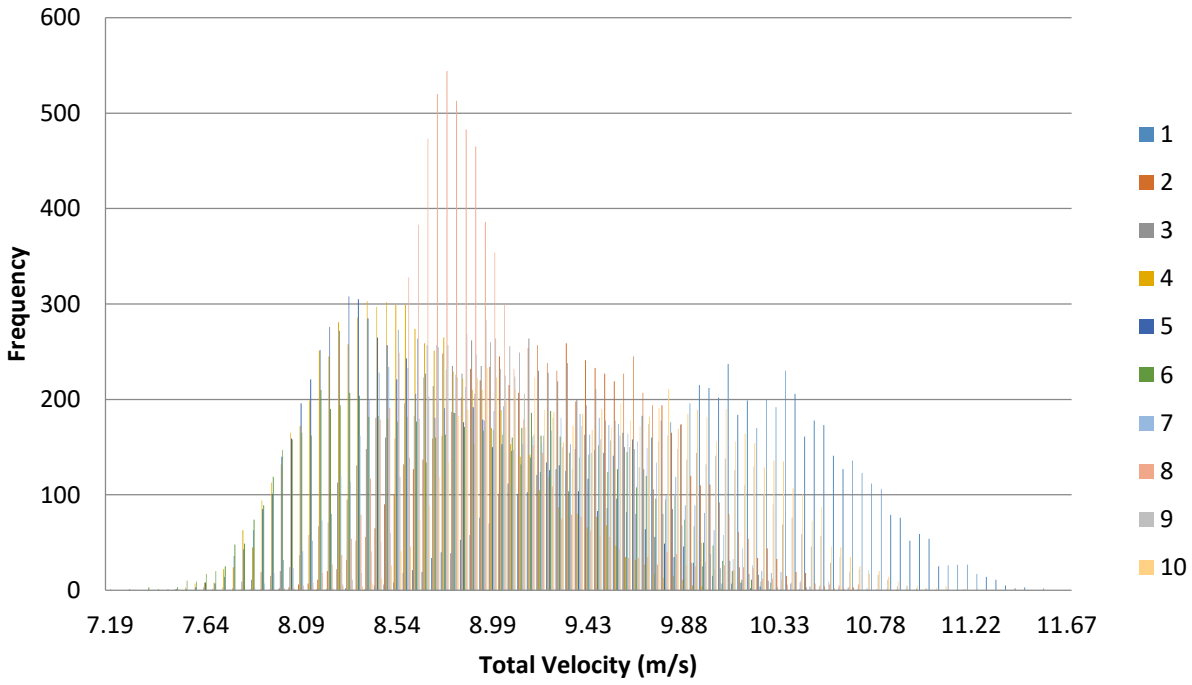


Figure 1. Velocity histogram for each interval (100 bins).

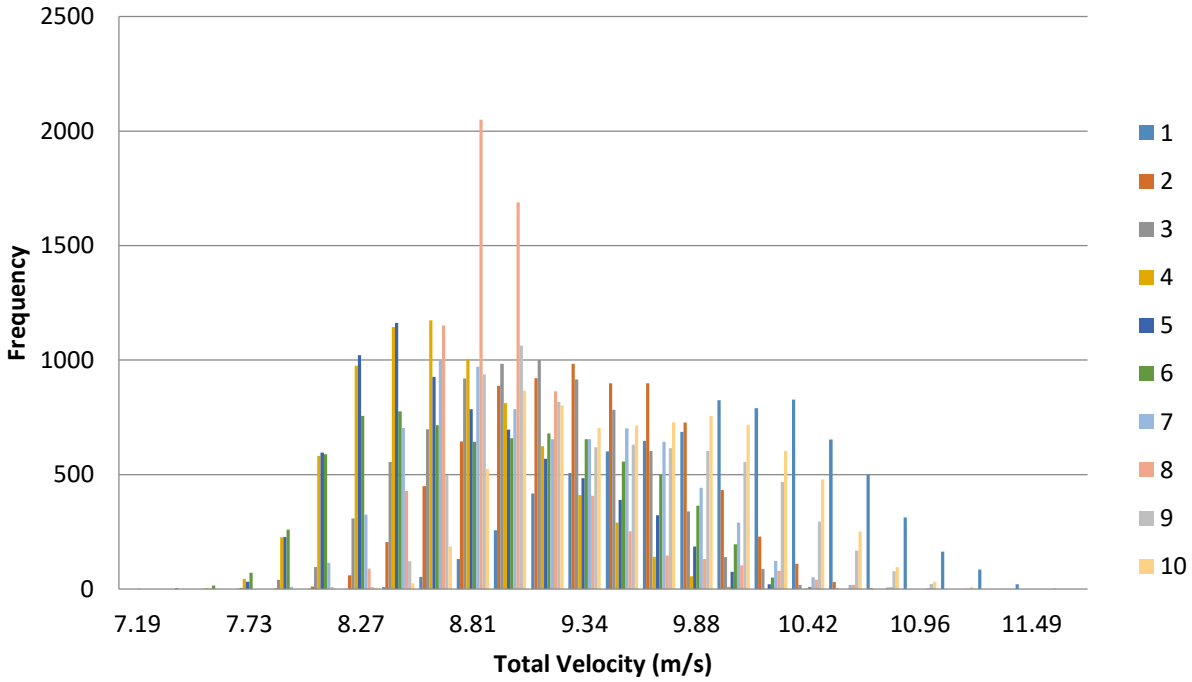
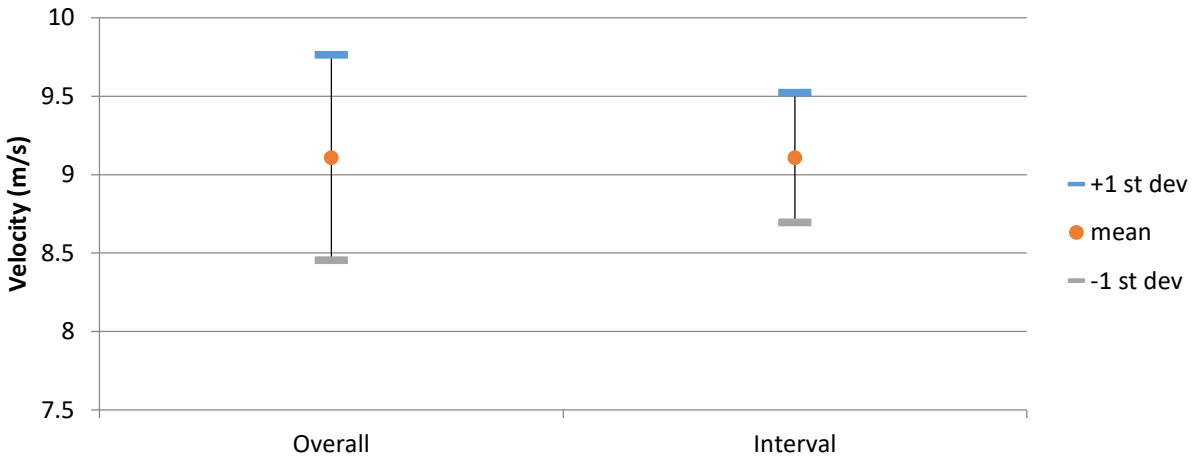
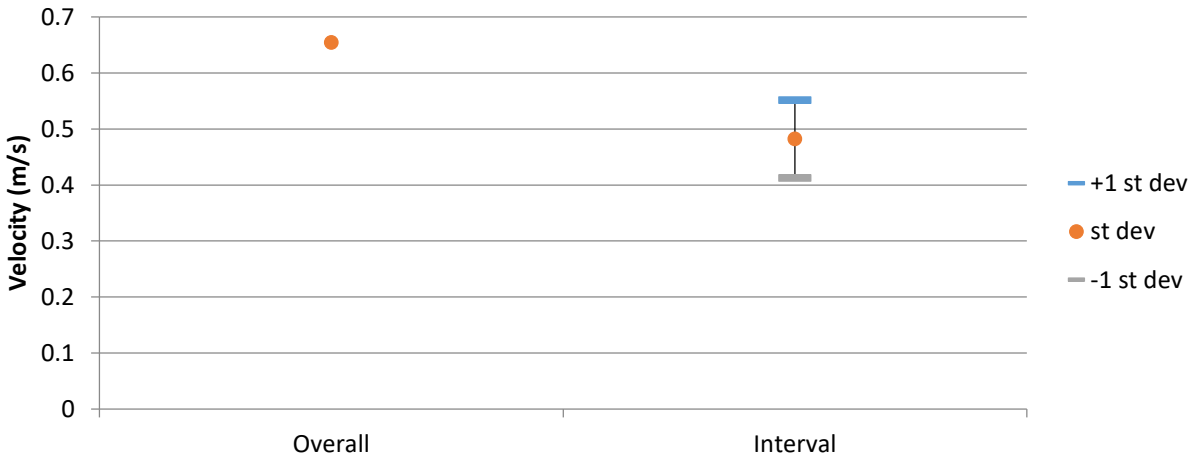


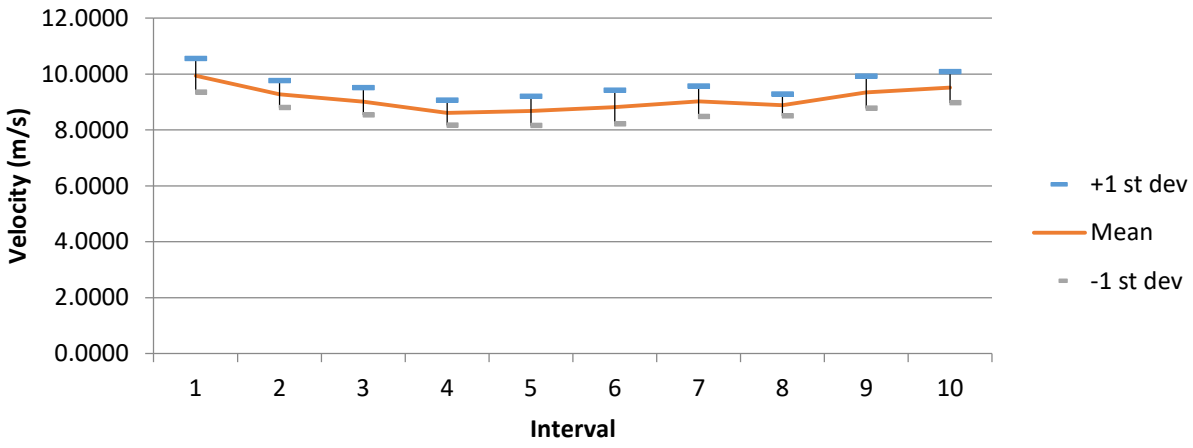
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 220
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: A4
First Sample Date: 23-Aug-13
First Sample Time: 08:13:55.937

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.9551	7.1591	8.5555	0.4127
u	8.5600	5.0200	6.3546	0.4421
v	-4.2400	-7.3800	-5.7015	0.3299
w	1.1500	-2.5700	-0.1680	0.3828

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	9.2334	7.9667	8.5076	0.2008	2.3606	2	0.02 %
2	9.2315	7.9698	8.4598	0.1907	2.2538	19	0.15 %
3	9.2303	7.9651	8.4585	0.1720	2.0330	11	0.09 %
4	9.1837	7.8005	8.4019	0.1980	2.3572	11	0.09 %
5	9.0845	7.6654	8.3792	0.2019	2.4094	6	0.05 %
6	10.7486	8.0508	8.8275	0.3542	4.0128	783	6.26 %
7	10.3456	8.0460	8.9046	0.2521	2.8310	3	0.02 %
8	10.9551	7.6251	9.0228	0.4783	5.3015	0	0.00 %
9	10.7634	7.3631	8.6614	0.4279	4.9400	22	0.18 %
10	8.9229	7.1591	7.9602	0.2524	3.1707	4	0.03 %
		Average	8.5583	0.2728	3.1670		
		St dev	0.2924	0.1032	1.1193		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	6.2454	-5.7711	0.0107	0.2950	0.0845	0.1141	4.7237	1.3534	1.8268
2	6.1455	-5.8078	0.0295	0.2920	0.0864	0.1129	4.7513	1.4063	1.8378
3	6.1318	-5.8186	-0.0978	0.2777	0.1134	0.1465	4.5295	1.8486	2.3895
4	6.1644	-5.6999	-0.0250	0.3029	0.1549	0.1580	4.9135	2.5135	2.5628
5	6.2437	-5.5751	-0.1493	0.2801	0.1662	0.2414	4.4854	2.6621	3.8669
6	6.4029	-6.0385	-0.3497	0.3663	0.2958	0.4964	5.7215	4.6194	7.7525
7	6.7071	-5.8228	-0.4118	0.3453	0.2685	0.3224	5.1482	4.0028	4.8061
8	6.9401	-5.6825	-0.6516	0.4530	0.5029	0.5478	6.5271	7.2468	7.8932
9	6.5700	-5.6202	-0.1238	0.3701	0.3790	0.3934	5.6326	5.7685	5.9872
10	5.9997	-5.2140	0.0710	0.3709	0.2094	0.2476	6.1825	3.4905	4.1266

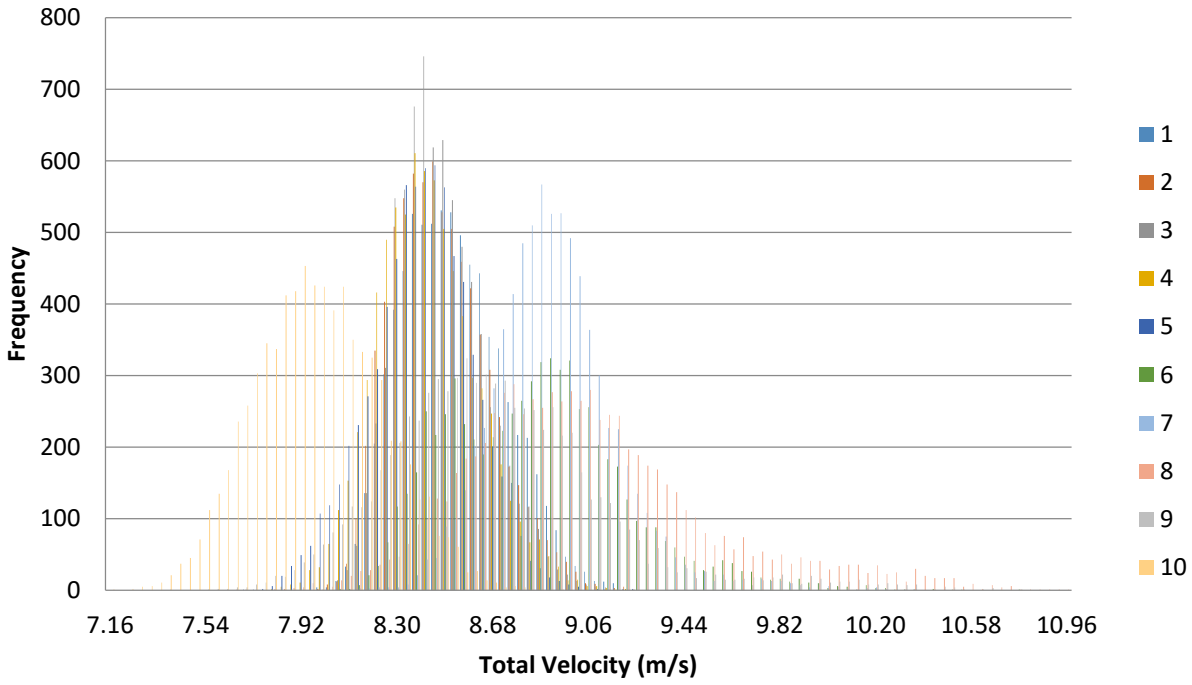


Figure 1. Velocity histogram for each interval (100 bins).

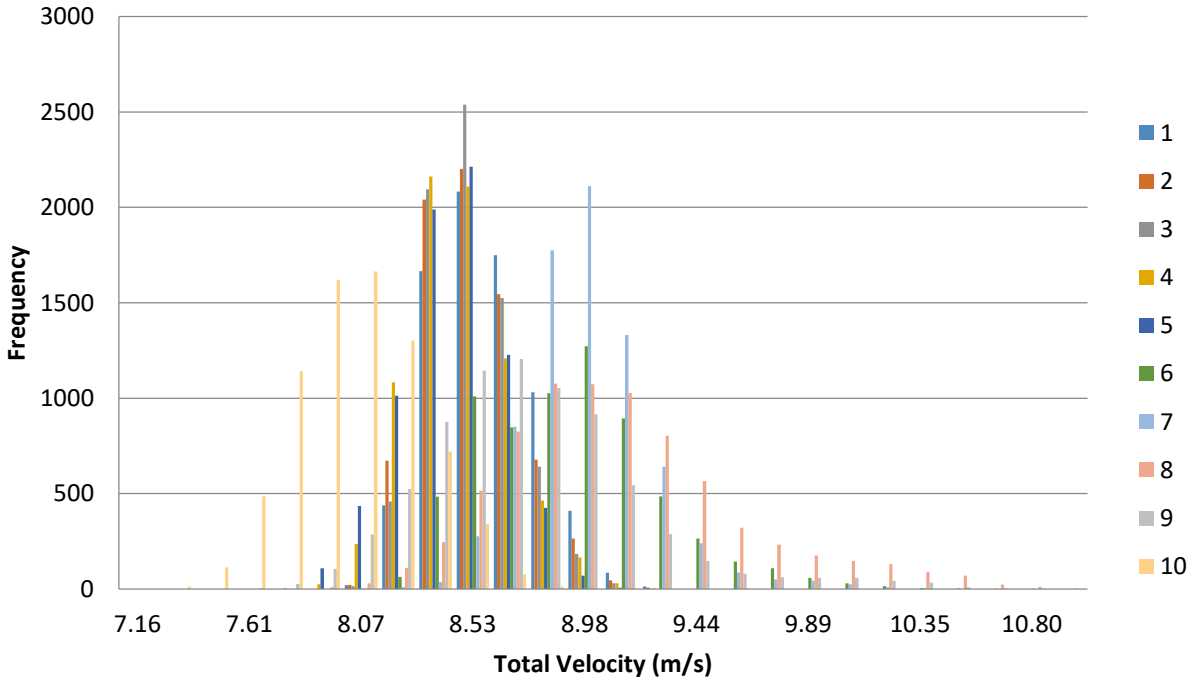
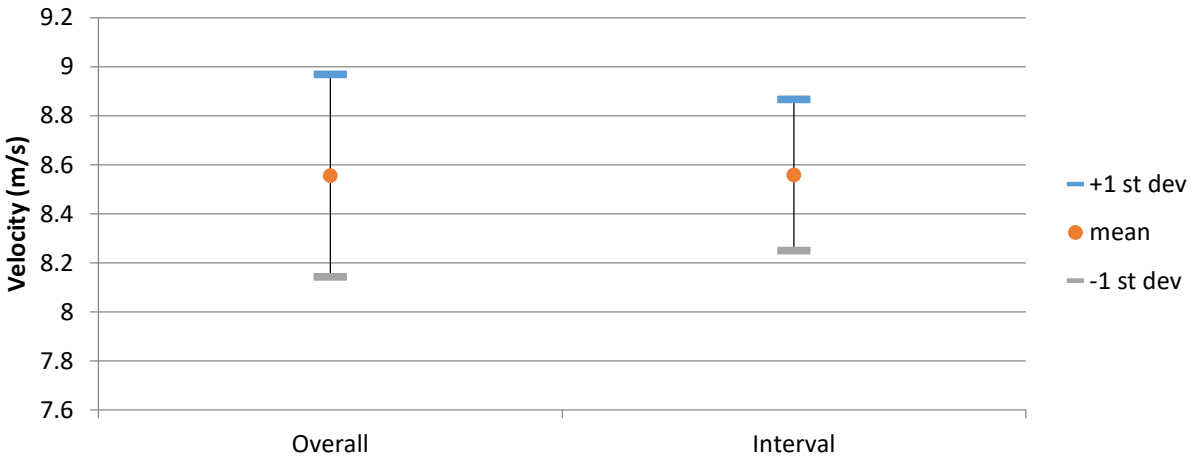
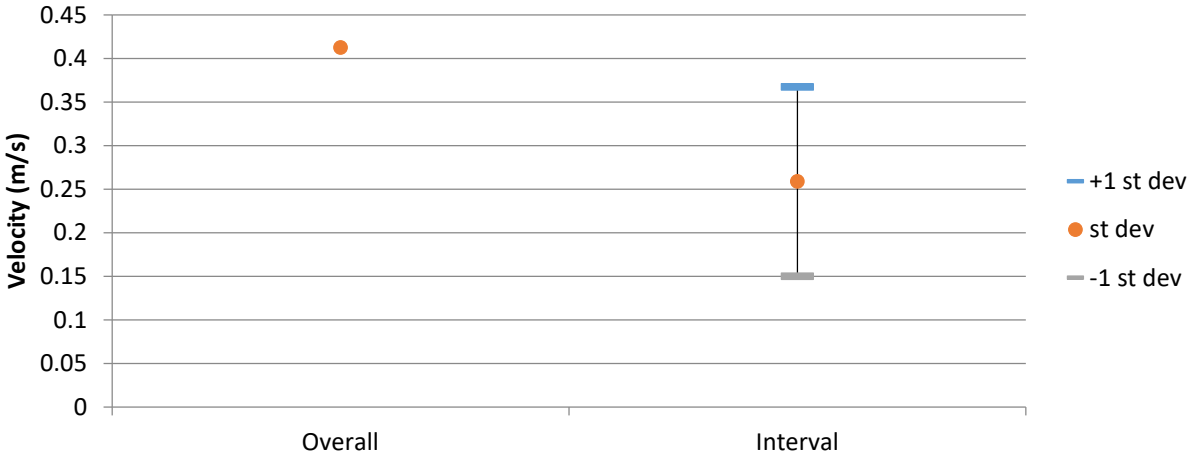


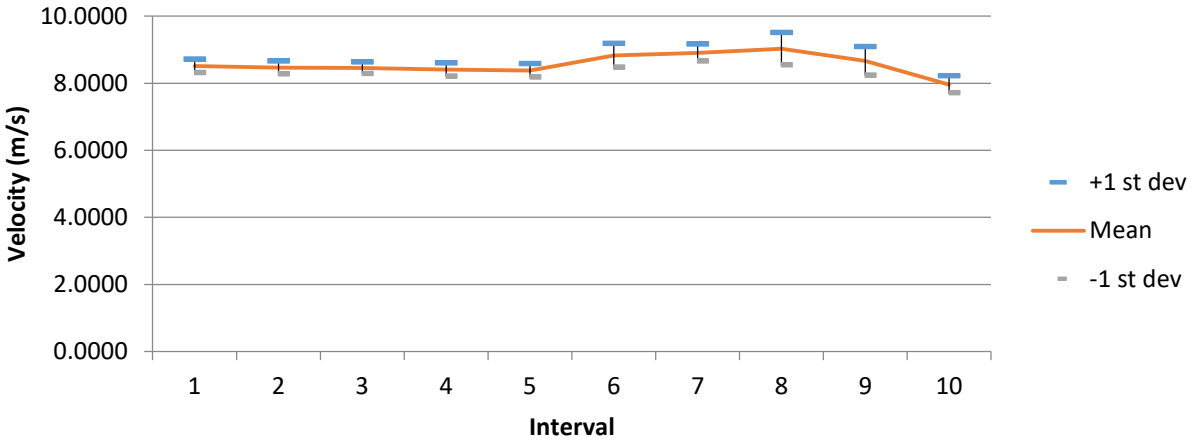
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 221
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: A5
First Sample Date: 23-Aug-13
First Sample Time: 08:16:42.296

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.9393	7.8878	8.7895	0.2372
u	8.3600	5.4200	6.3014	0.2731
v	-4.9200	-7.0300	-6.1142	0.2806
w	1.2200	-2.2600	0.0701	0.2490

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	9.6730	8.3968	9.0393	0.1542	1.7056	57	0.46 %
2	9.6071	8.7214	9.1095	0.1224	1.3432	847	6.78 %
3	9.5053	8.4366	8.9166	0.1507	1.6904	34	0.27 %
4	9.2491	8.1969	8.7316	0.1470	1.6837	454	3.63 %
5	9.5134	7.8878	8.6142	0.1837	2.1329	157	1.26 %
6	9.4705	7.9161	8.6467	0.1805	2.0870	28	0.22 %
7	9.7166	8.1263	8.6927	0.1688	1.9419	44	0.35 %
8	9.4486	8.0401	8.6390	0.1872	2.1666	86	0.69 %
9	9.4889	8.0695	8.7058	0.1650	1.8951	154	1.23 %
10	10.9393	8.2817	8.8268	0.2270	2.5715	6	0.05 %
		Average	8.7922	0.1686	1.9218		
		St dev	0.1661	0.0270	0.3236		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	6.4287	-6.3475	0.0352	0.2194	0.1988	0.1608	3.4125	3.0928	2.5016
2	6.3160	-6.5600	0.0476	0.1670	0.1441	0.1503	2.6445	2.2819	2.3792
3	6.3584	-6.2450	0.0666	0.2266	0.1472	0.1514	3.5646	2.3155	2.3815
4	6.1047	-6.2376	0.0461	0.1967	0.1636	0.1405	3.2219	2.6799	2.3018
5	6.2127	-5.9514	0.1324	0.2903	0.2315	0.2579	4.6720	3.7262	4.1519
6	6.2870	-5.9245	0.0787	0.2586	0.2044	0.2400	4.1140	3.2512	3.8172
7	6.2543	-6.0246	0.0517	0.2587	0.1823	0.2759	4.1361	2.9144	4.4115
8	6.3232	-5.8600	0.2880	0.2960	0.2267	0.3487	4.6804	3.5847	5.5144
9	6.2297	-6.0726	0.0911	0.2381	0.1795	0.1858	3.8216	2.8817	2.9833
10	6.4874	-5.9708	-0.1368	0.3222	0.1913	0.2627	4.9659	2.9489	4.0500

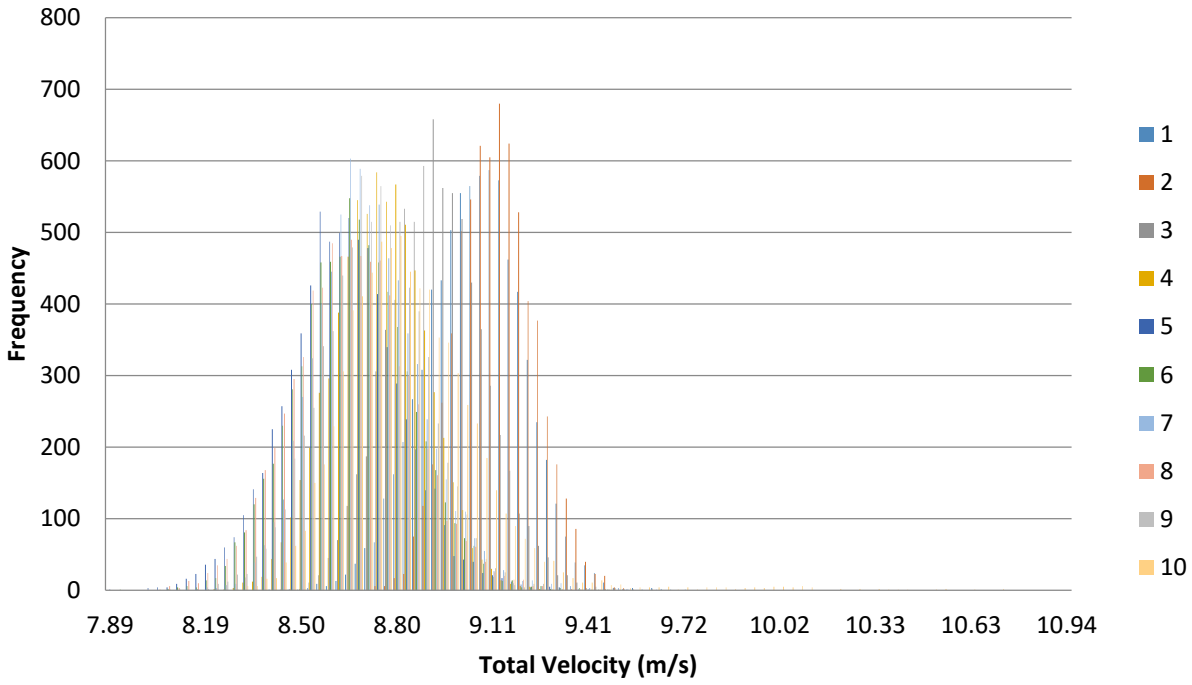


Figure 1. Velocity histogram for each interval (100 bins).

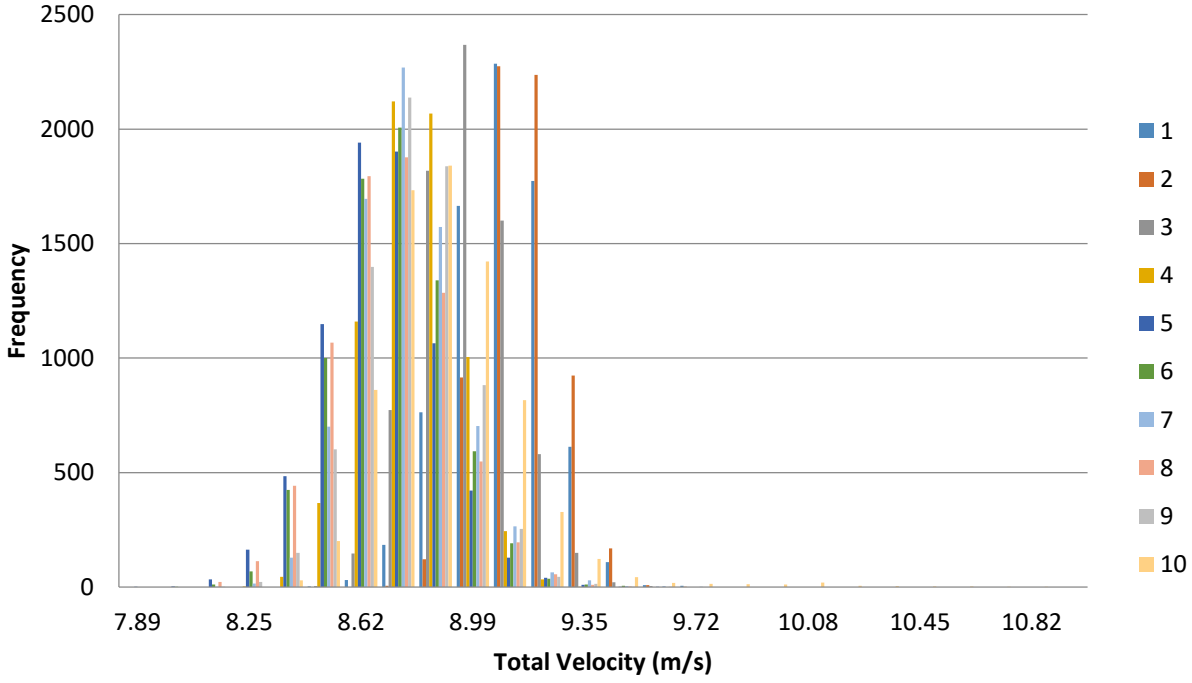
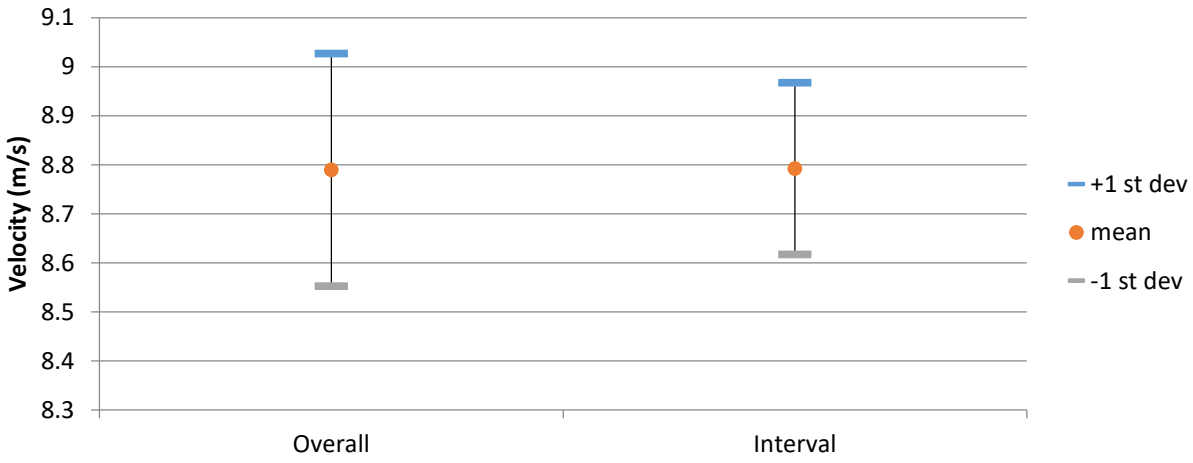
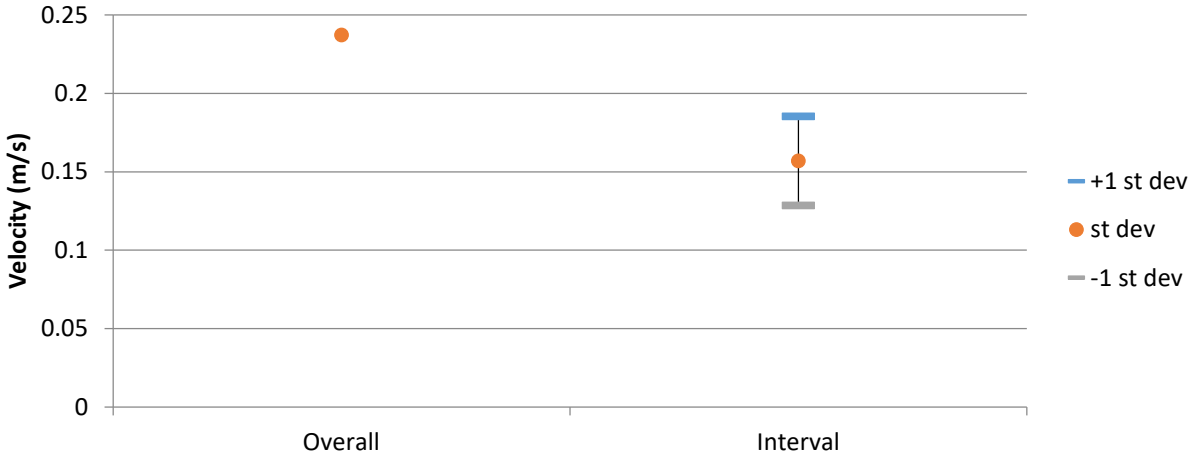


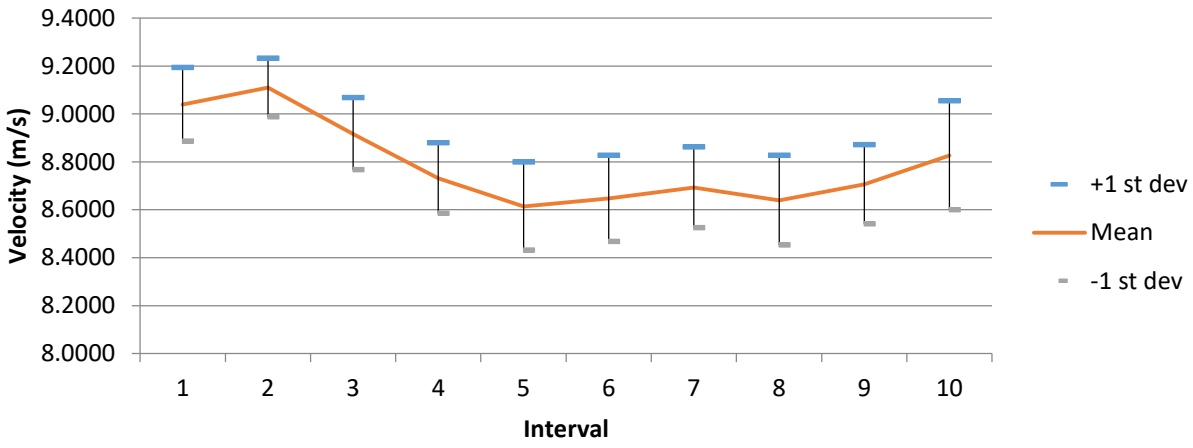
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 222
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: A2
First Sample Date: 23-Aug-13
First Sample Time: 08:19:31.375

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.3448	7.6672	8.9898	0.4598
u	8.2100	5.2000	6.8173	0.4808
v	-4.3700	-6.8000	-5.4514	0.3086
w	-0.7070	-3.2600	-2.1079	0.2538

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	10.3272	7.9677	8.8457	0.3065	3.4647	0	0.00 %
2	10.3448	8.0227	9.0267	0.4363	4.8337	0	0.00 %
3	10.2688	8.0854	9.0520	0.4590	5.0707	0	0.00 %
4	10.1286	7.7378	8.8825	0.4299	4.8402	0	0.00 %
5	10.0109	7.7173	8.8139	0.4878	5.5345	3	0.02 %
6	9.8543	7.7587	8.8237	0.4527	5.1308	0	0.00 %
7	9.9385	7.6672	8.9043	0.4672	5.2474	0	0.00 %
8	9.9155	7.7395	9.1127	0.4467	4.9015	0	0.00 %
9	9.9993	7.8770	9.1810	0.4192	4.5664	0	0.00 %
10	10.0098	7.8982	9.2552	0.4154	4.4883	0	0.00 %
		Average	8.9898	0.4321	4.8078		
		St dev	0.1501	0.0468	0.5357		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	6.6370	-5.3940	-2.2240	0.3493	0.2642	0.2400	5.2626	3.9812	3.6159
2	6.7421	-5.6016	-2.1234	0.4315	0.2967	0.2339	6.4001	4.4007	3.4691
3	6.8031	-5.5613	-2.1401	0.4637	0.2988	0.2351	6.8156	4.3922	3.4561
4	6.7799	-5.2898	-2.1893	0.4559	0.2670	0.2516	6.7244	3.9374	3.7116
5	6.7106	-5.2417	-2.2216	0.5904	0.2475	0.2624	8.7980	3.6886	3.9099
6	6.7421	-5.2852	-2.0814	0.4635	0.2745	0.2249	6.8742	4.0716	3.3353
7	6.7105	-5.4775	-2.0277	0.4567	0.2984	0.2492	6.8061	4.4474	3.7142
8	6.9961	-5.4586	-2.0279	0.5106	0.2673	0.2311	7.2984	3.8210	3.3036
9	6.9748	-5.6004	-2.0324	0.4254	0.2770	0.2567	6.0994	3.9720	3.6803
10	7.0766	-5.6039	-2.0115	0.4183	0.2794	0.2231	5.9108	3.9476	3.1533

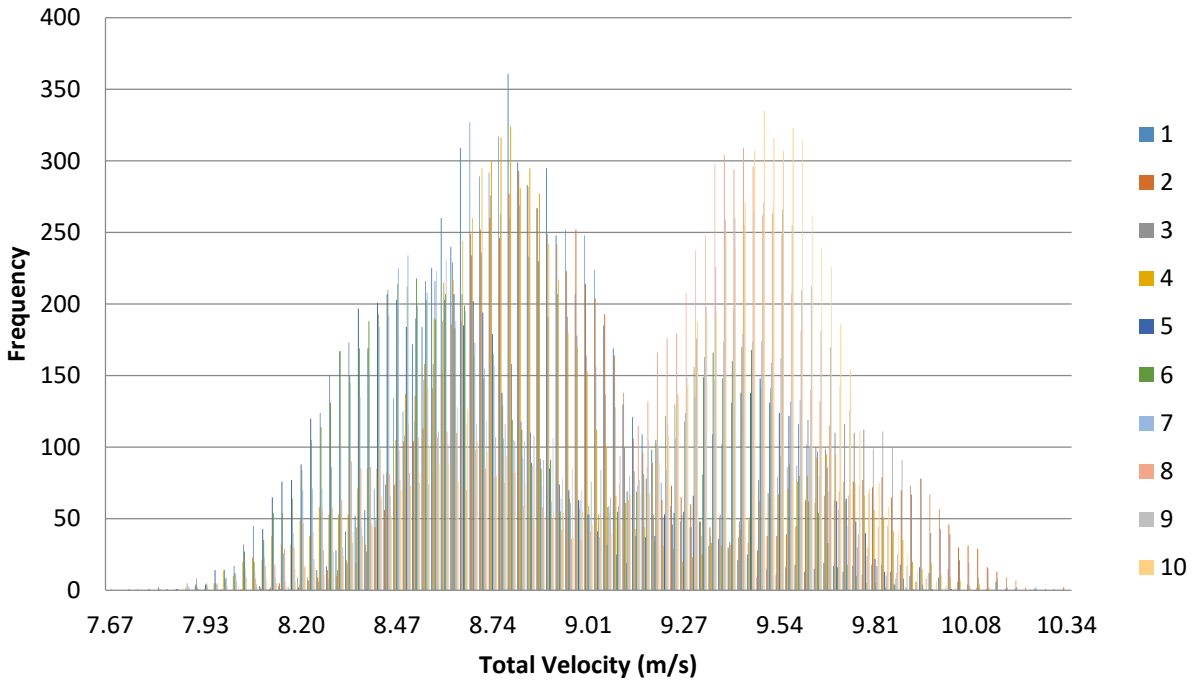


Figure 1. Velocity histogram for each interval (100 bins).

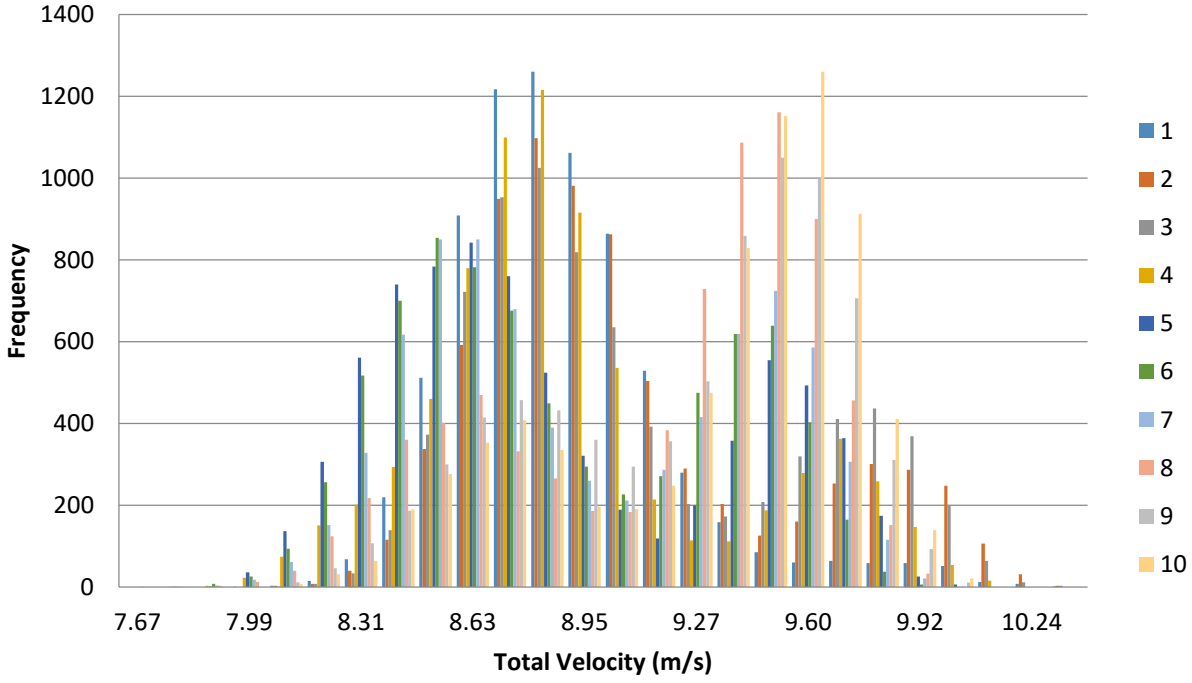
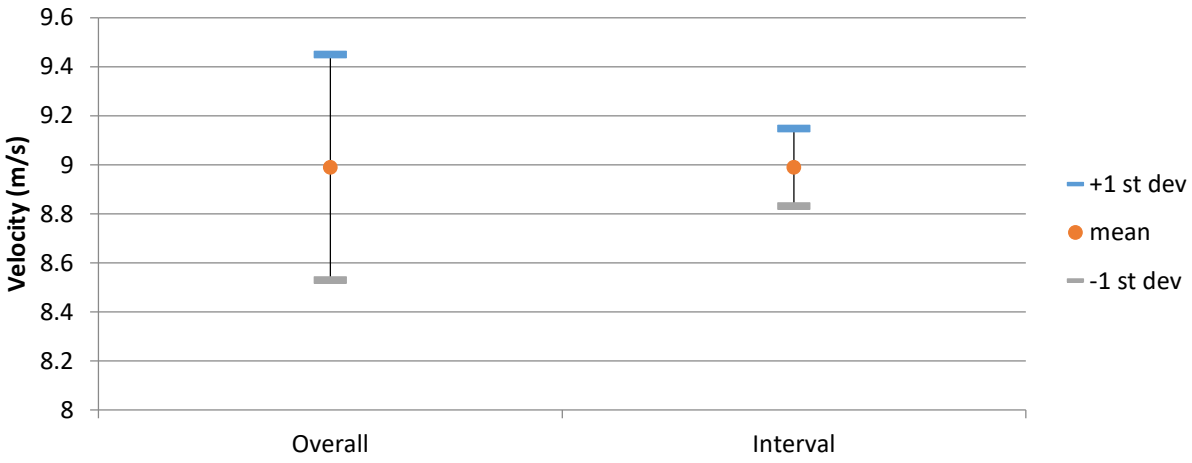
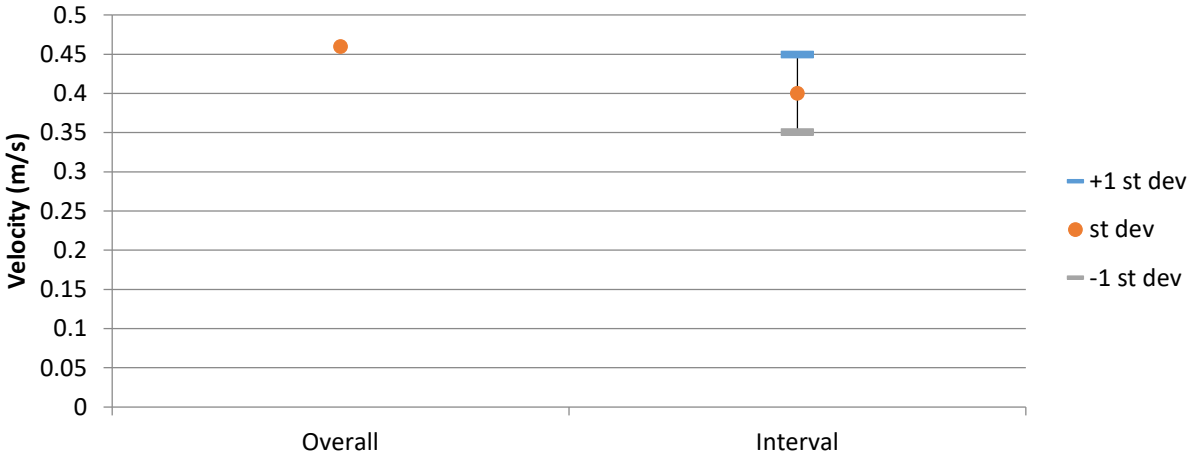


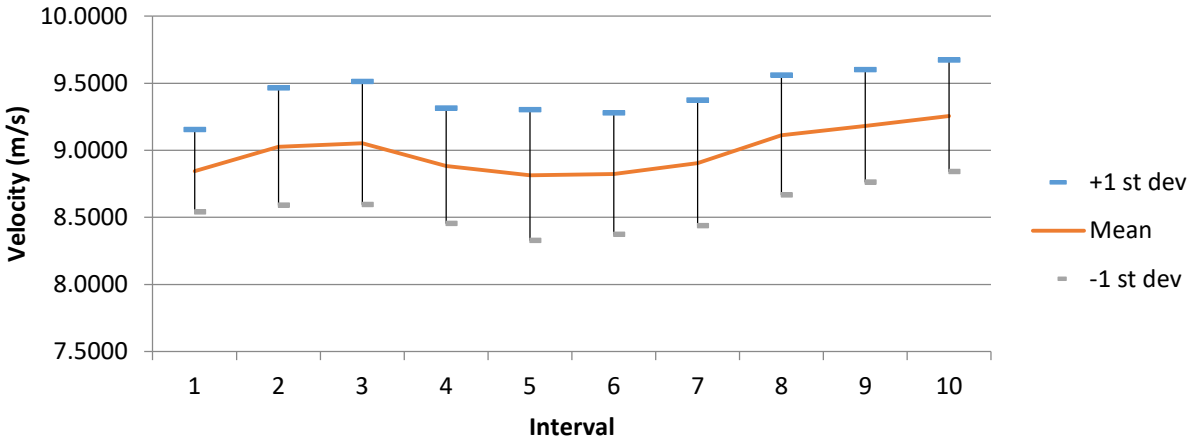
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 223
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: G2
First Sample Date: 23-Aug-13
First Sample Time: 08:22:29.062

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.4708	10.2334	10.7060	0.2105
u	10.6000	8.5500	9.2819	0.2441
v	6.6300	2.0800	3.4955	0.5318
w	-3.0400	-5.1400	-3.9831	0.2889

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.4400	10.2334	10.6623	0.1282	1.8814
2	11.4841	10.2567	10.7118	0.2015	1.6565
3	12.0696	10.3207	10.6875	0.1770	1.3446
4	11.5684	10.2647	10.5768	0.1422	1.3981
5	11.9164	10.3099	10.5809	0.1479	1.7636
6	12.0499	10.3586	10.7376	0.1894	2.2542
7	12.3165	10.2939	10.7838	0.2431	1.1445
8	11.6773	10.2973	10.6276	0.1216	1.1099
9	11.5236	10.3853	10.7167	0.1189	2.3742
10	12.4708	10.5011	10.9756	0.2606	1.6164
		Average	10.7060	0.1731	1.6543
		St Dev	0.1158	0.0504	0.4075

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.4003	3.2730	-3.7923	0.2199	0.4068	0.1633	2.3394	4.3279	1.7370
2	9.5267	3.1494	-3.7206	0.3060	0.3610	0.1997	3.2119	3.7893	2.0960
3	9.2594	3.4500	-4.0362	0.1771	0.5185	0.1528	1.9131	5.5994	1.6507
4	9.0018	3.3912	-4.3653	0.1777	0.4962	0.1510	1.9736	5.5125	1.6774
5	9.0944	3.4396	-4.1388	0.1915	0.4805	0.2025	2.1055	5.2835	2.2271
6	9.2269	3.8296	-3.9025	0.1450	0.5071	0.1531	1.5718	5.4963	1.6590
7	9.3189	3.8510	-3.7765	0.1758	0.5676	0.2473	1.8861	6.0911	2.6541
8	9.3274	3.3772	-3.7889	0.2006	0.3728	0.1329	2.1506	3.9968	1.4244
9	9.3364	3.4160	-3.9697	0.2101	0.4024	0.2426	2.2508	4.3099	2.5985
10	9.3272	3.7776	-4.3401	0.1349	0.6186	0.1639	1.4463	6.6326	1.7572

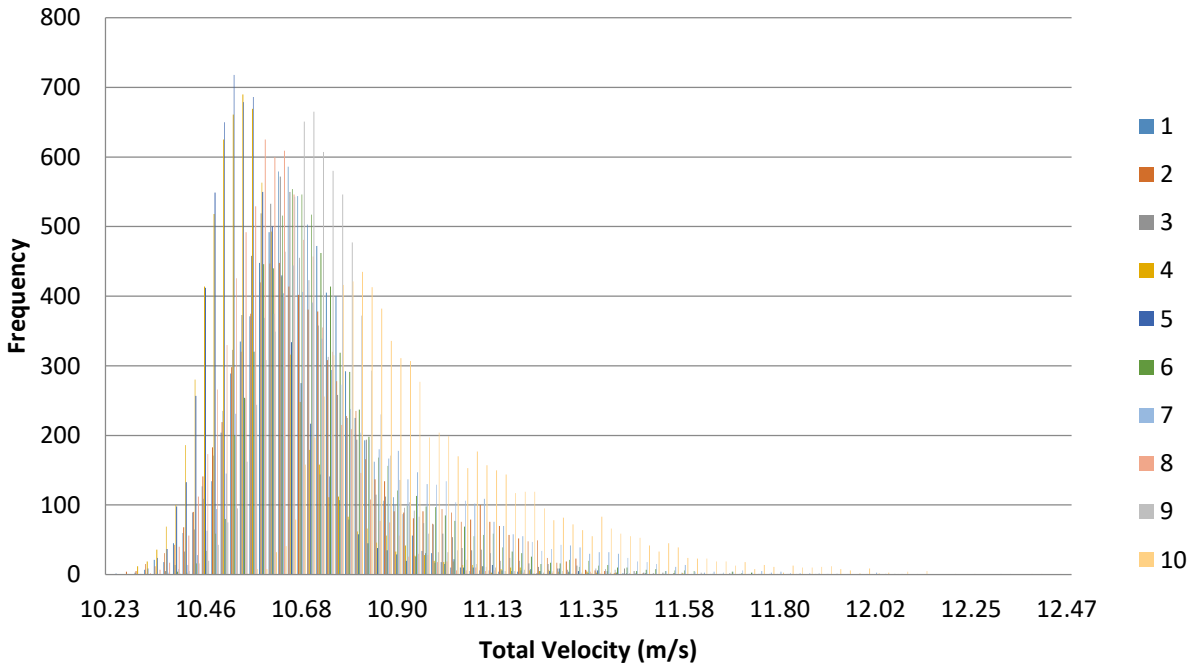


Figure 1. Velocity histogram for each interval (100 bins).

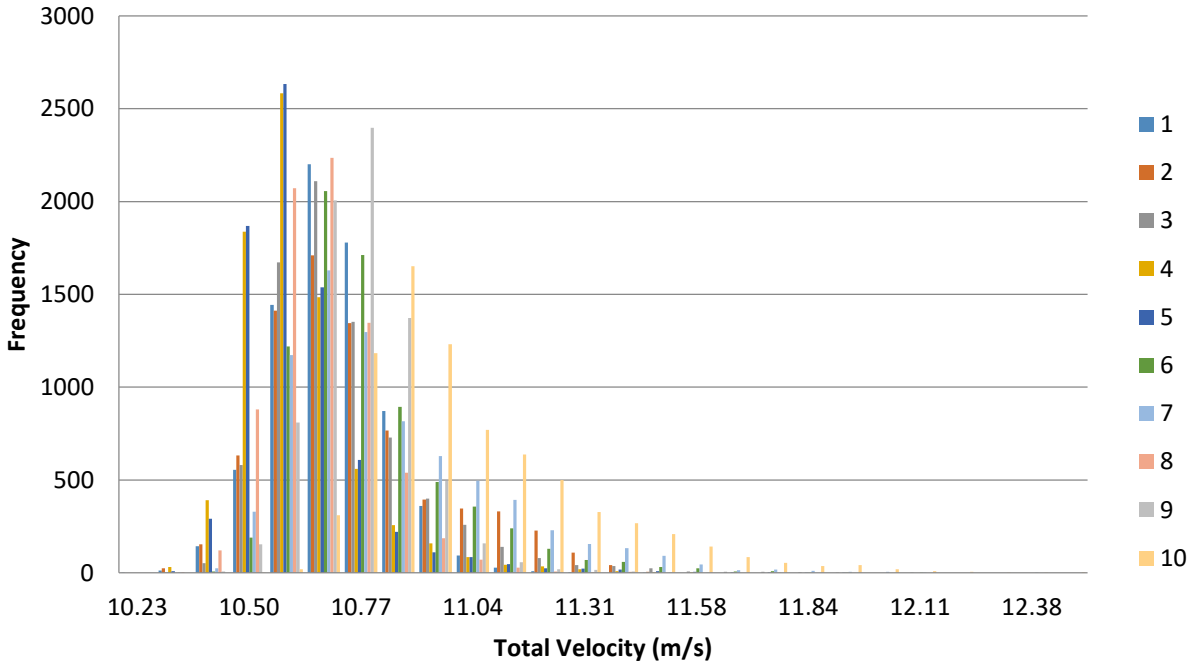
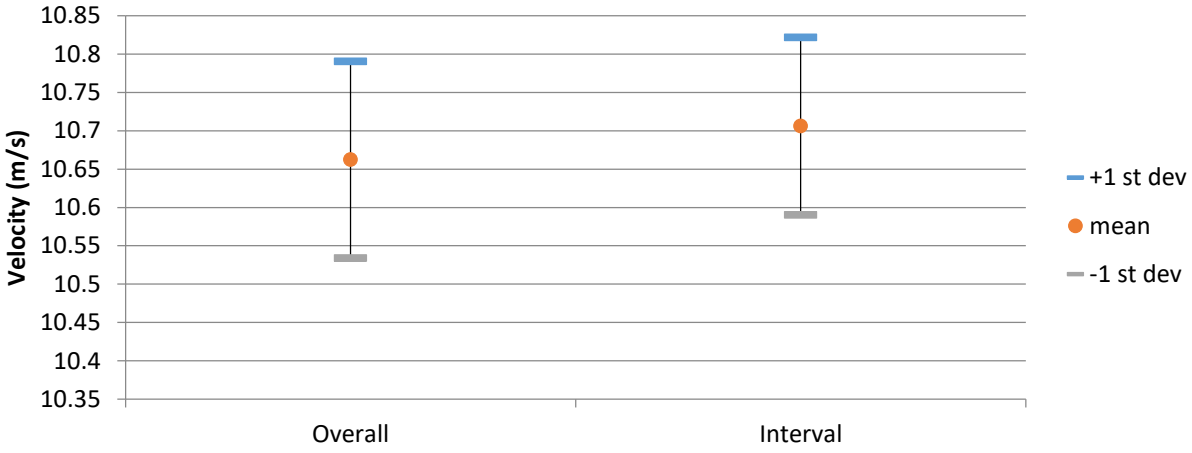
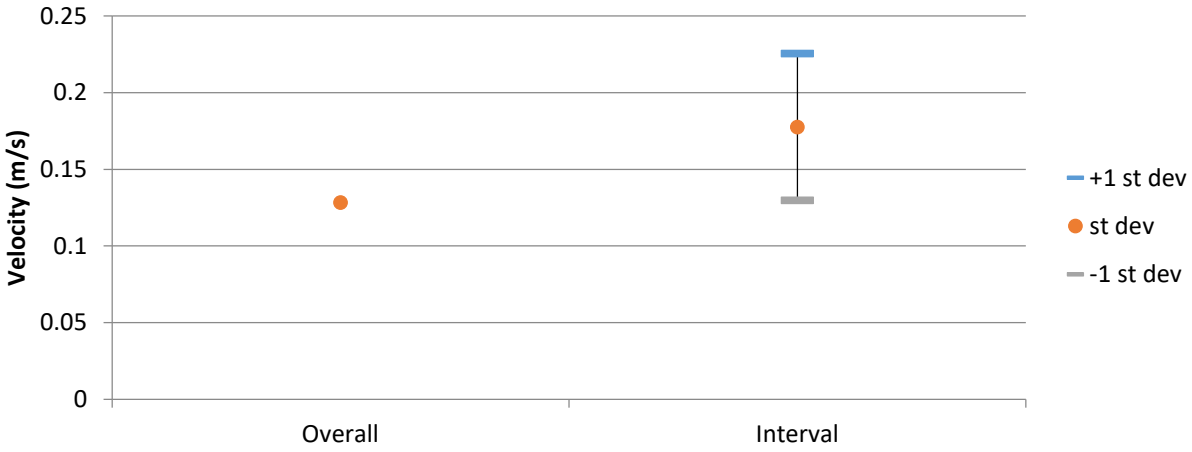


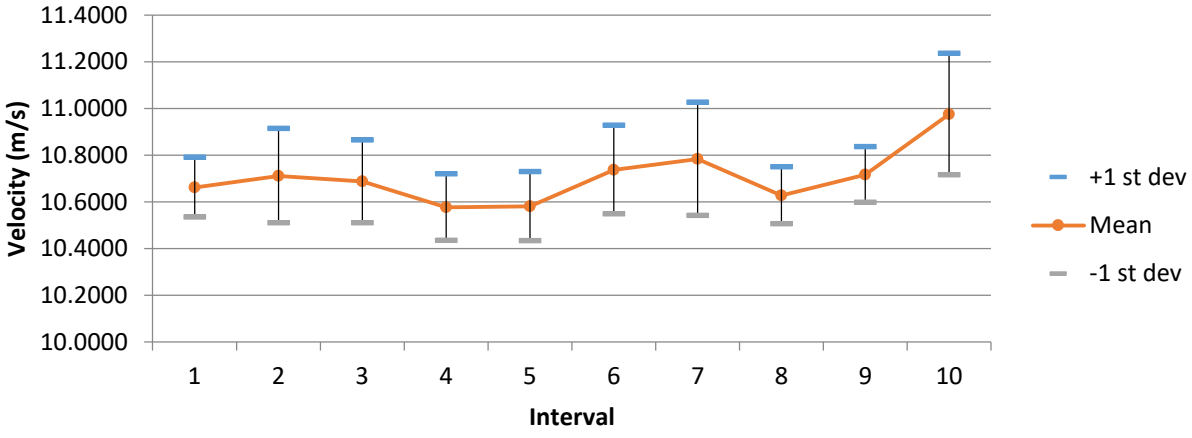
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 224
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: G5
First Sample Date: 23-Aug-13
First Sample Time: 08:25:36.812

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.8430	8.9042	9.7652	0.1989
u	10.1000	8.0600	8.9950	0.2304
v	5.7700	1.9000	3.6487	0.5059
w	0.0358	-2.0500	-0.8856	0.2890

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	10.0511	8.9042	9.4526	0.1691	1.4277
2	10.3023	9.0099	9.6666	0.1380	1.6079
3	10.4312	9.2359	9.7776	0.1572	1.5600
4	10.8430	9.5083	9.9971	0.1560	1.4623
5	10.6022	9.3430	9.8239	0.1437	1.2903
6	10.3769	9.3664	9.8239	0.1268	1.2759
7	10.3746	9.4713	9.8760	0.1260	1.5122
8	10.2748	9.2514	9.7243	0.1470	1.4351
9	10.3606	9.1700	9.7833	0.1404	1.4855
10	10.3099	9.2805	9.7271	0.1445	1.4835
		Average	9.7652	0.1449	1.4540
		St Dev	0.1430	0.0134	0.0999

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.9798	2.8685	-0.5693	0.2485	0.2896	0.2102	2.7677	3.2255	2.3410
2	8.9515	3.4966	-0.9109	0.2314	0.4180	0.2176	2.5851	4.6697	2.4309
3	8.9979	3.6654	-0.9468	0.2365	0.4587	0.2555	2.6282	5.0981	2.8392
4	8.9746	4.2059	-1.2214	0.1731	0.3742	0.2680	1.9291	4.1692	2.9861
5	8.9071	4.0348	-0.8410	0.2035	0.3094	0.2624	2.2846	3.4739	2.9460
6	8.9257	4.0024	-0.7753	0.2257	0.3536	0.2462	2.5281	3.9622	2.7582
7	9.0426	3.8303	-0.9670	0.2029	0.3104	0.1970	2.2444	3.4331	2.1788
8	9.0362	3.5063	-0.6716	0.2366	0.2672	0.2385	2.6189	2.9569	2.6394
9	9.0788	3.4951	-0.9262	0.2288	0.3478	0.2458	2.5207	3.8310	2.7071
10	9.0554	3.3816	-1.0262	0.2409	0.2759	0.1254	2.6606	3.0467	1.3844

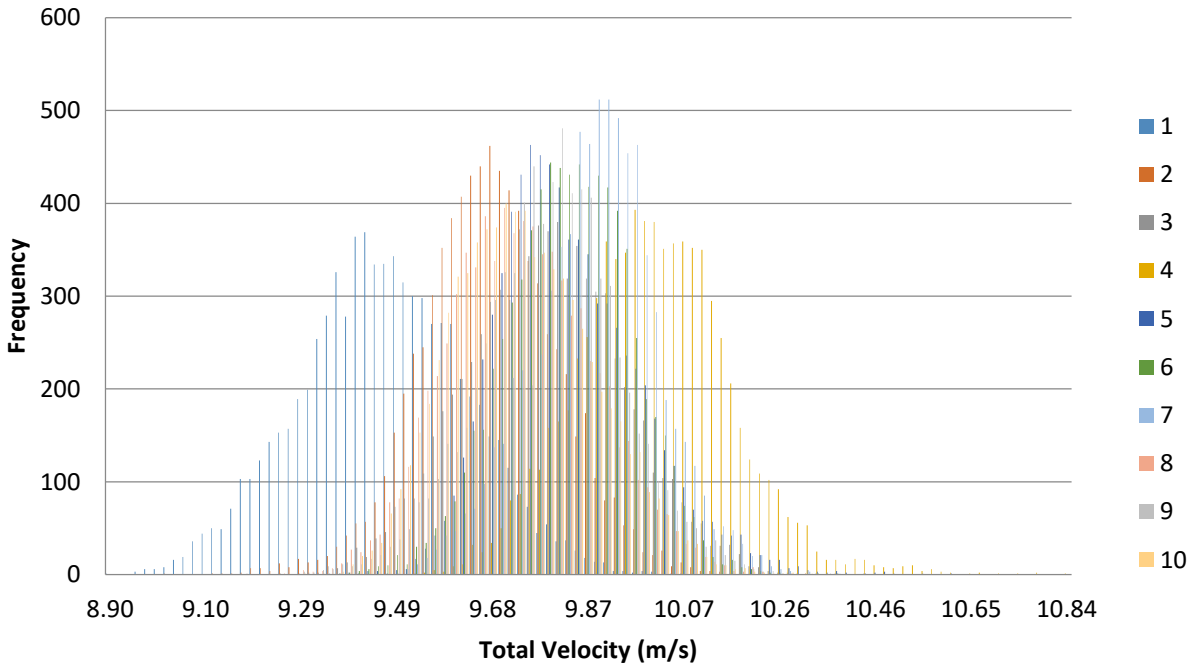


Figure 1. Velocity histogram for each interval (100 bins).

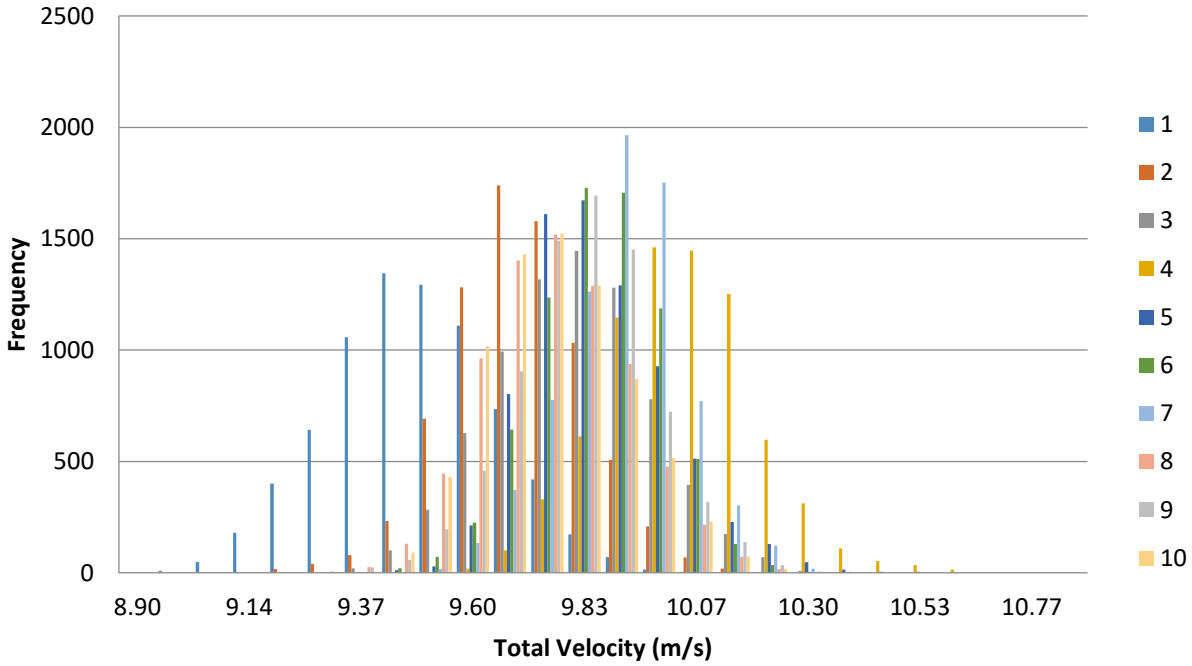
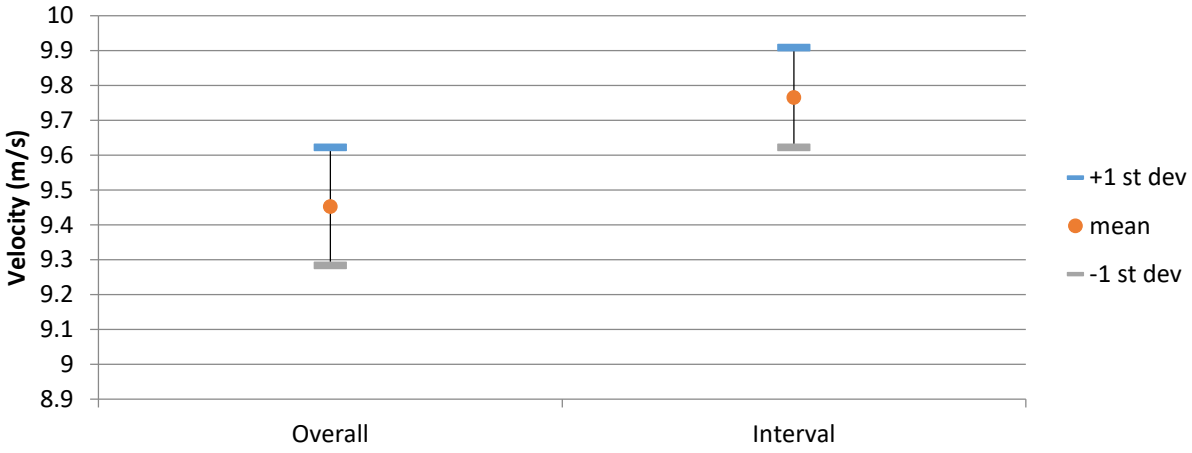
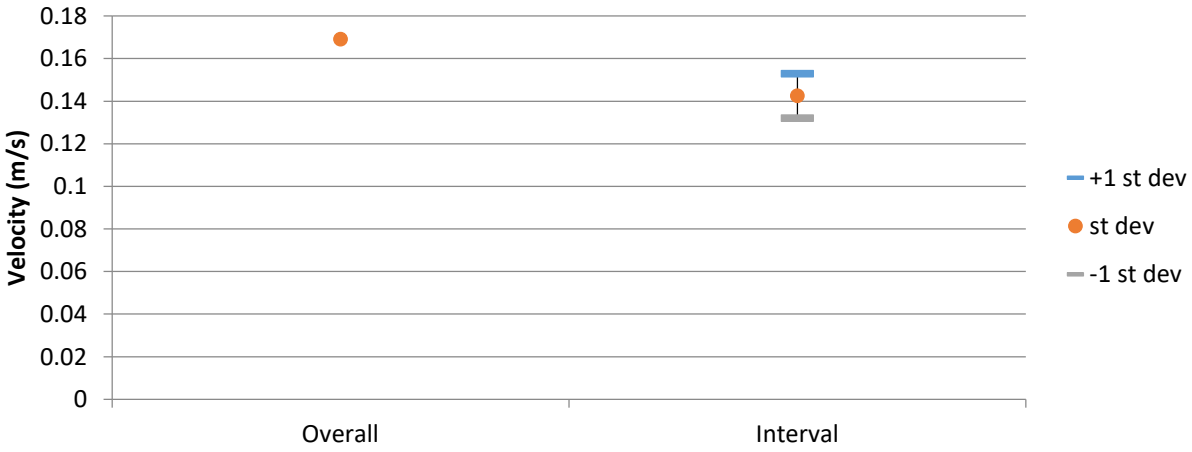


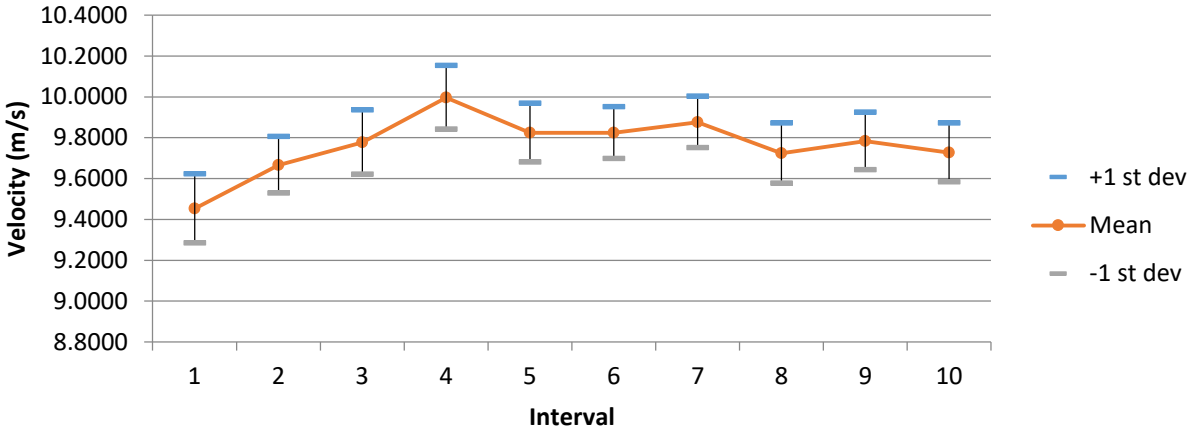
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 225
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: G4
First Sample Date: 23-Aug-13
First Sample Time: 08:27:26.109

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.5778	8.9266	9.8759	0.2358
u	10.4000	7.6500	8.9766	0.2950
v	7.0900	1.8700	3.7779	0.5827
w	0.0942	-3.4000	-1.4439	0.4754

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	10.4405	8.9266	9.6407	0.2274	2.1631
2	10.9987	9.0073	9.8277	0.2126	2.2930
3	10.8479	8.9994	9.7173	0.2228	1.8908
4	11.0149	9.4739	9.9167	0.1875	1.8863
5	11.5050	9.4522	9.9709	0.1881	1.5734
6	11.5778	9.5590	10.0192	0.1576	2.1291
7	10.9986	9.1947	9.8226	0.2091	1.5965
8	11.2973	9.4282	9.9575	0.1590	2.3549
9	11.4400	9.2228	9.8637	0.2323	2.1379
10	11.4343	9.3696	10.0233	0.2143	2.0360
		Average	9.8760	0.2011	2.0061
		St Dev	0.1271	0.0269	0.2539

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.9197	3.5123	-0.7569	0.3653	0.4200	0.4644	4.0953	4.7091	5.2068
2	8.9615	3.7609	-1.2732	0.2913	0.5389	0.4240	3.2504	6.0133	4.7314
3	8.9455	3.6003	-1.0187	0.3423	0.4582	0.3531	3.8264	5.1217	3.9473
4	8.9892	3.8773	-1.4419	0.2915	0.5742	0.2077	3.2426	6.3881	2.3105
5	8.9904	3.9968	-1.4824	0.2615	0.5603	0.2695	2.9089	6.2324	2.9978
6	8.9925	4.0416	-1.6672	0.2338	0.5555	0.2572	2.6002	6.1778	2.8596
7	9.0267	3.4119	-1.7138	0.3104	0.5168	0.3231	3.4385	5.7247	3.5795
8	8.9303	4.0669	-1.5764	0.2434	0.5468	0.2083	2.7254	6.1226	2.3326
9	8.9311	3.8260	-1.5452	0.2517	0.5372	0.4536	2.8177	6.0146	5.0786
10	9.0796	3.6852	-1.9633	0.2922	0.6736	0.3170	3.2183	7.4188	3.4914

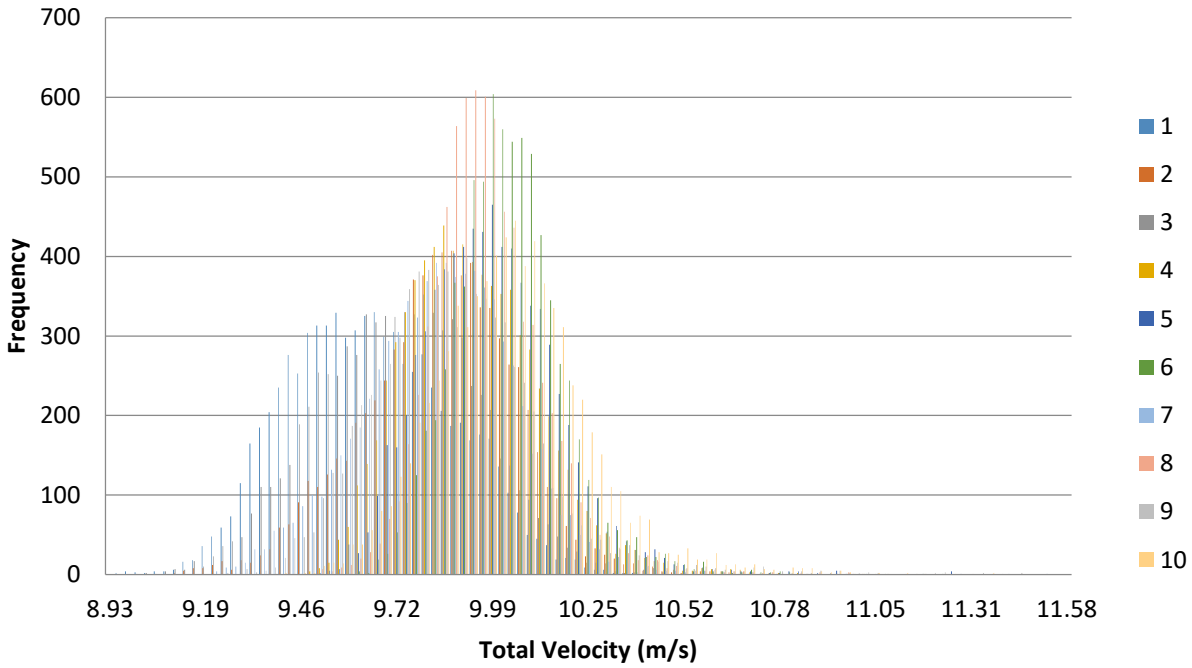


Figure 1. Velocity histogram for each interval (100 bins).

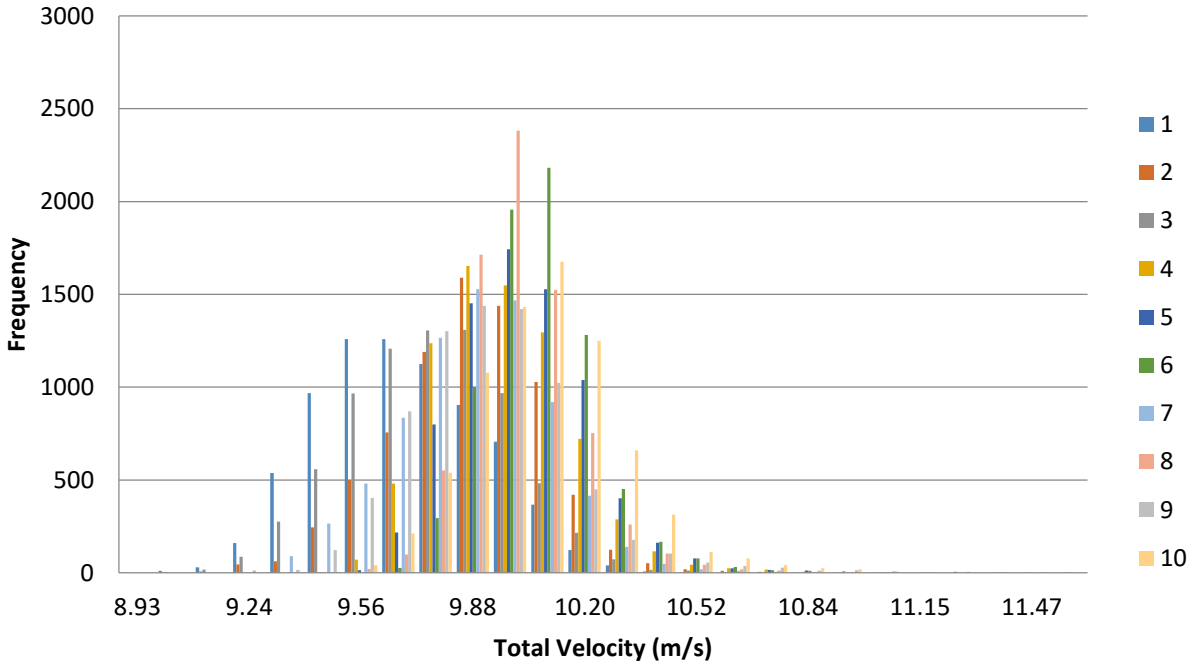
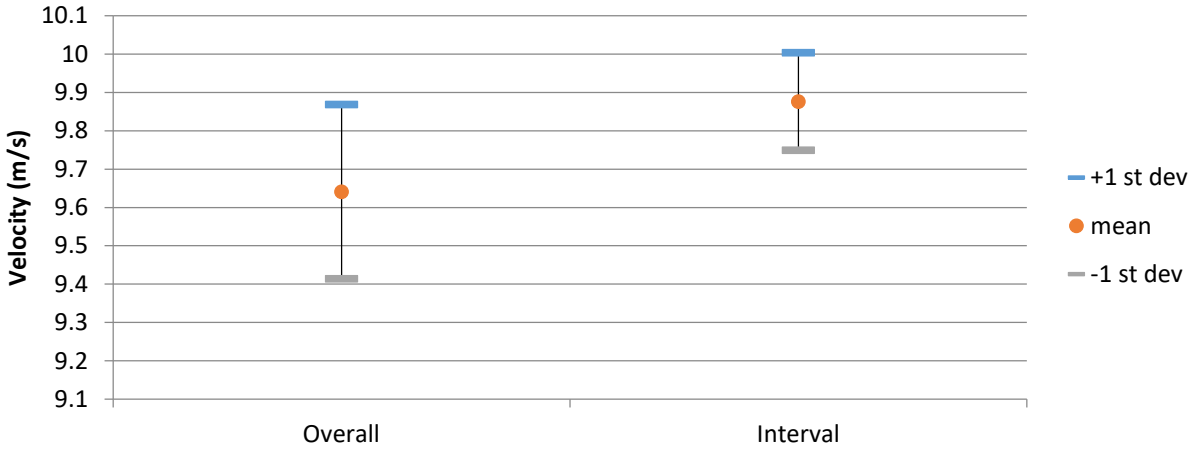
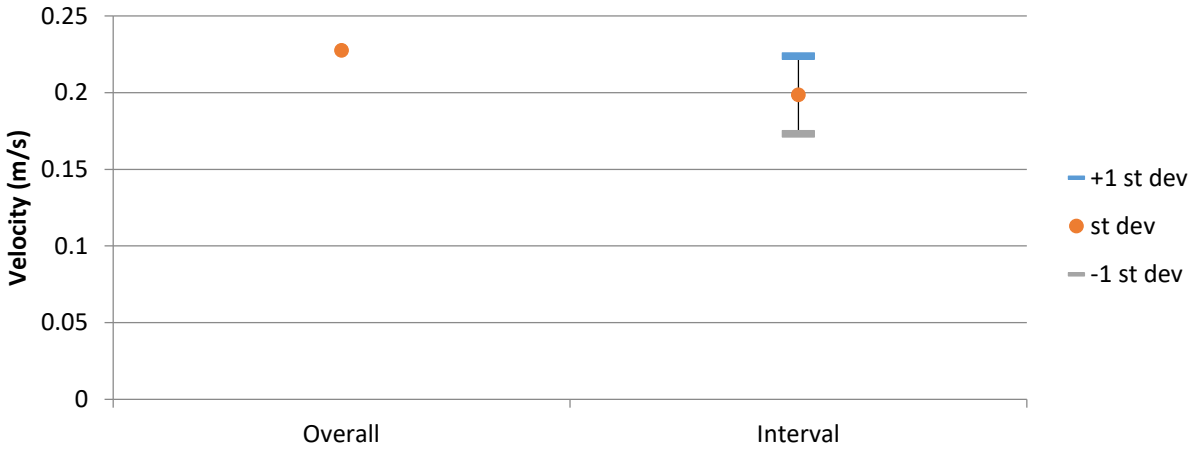


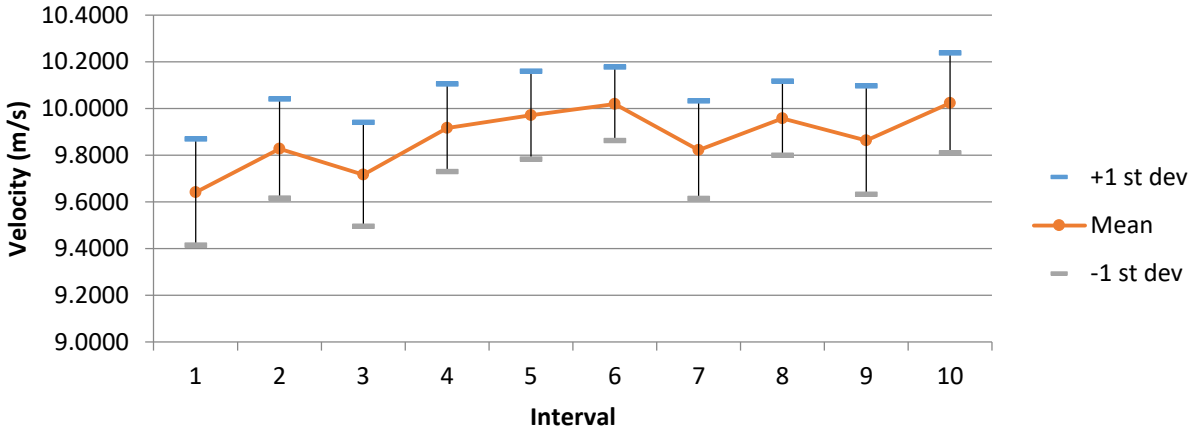
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 226
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: G3
First Sample Date: 23-Aug-13
First Sample Time: 08:29:01.406

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.3305	9.5910	10.1789	0.1593
u	10.2000	8.5100	9.3091	0.2199
v	6.0200	1.8900	3.3411	0.4767
w	-1.3900	-3.3400	-2.3315	0.3204

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	10.6155	9.7479	10.1427	0.1292	1.3042
2	10.6814	9.6675	10.1101	0.1319	1.3023
3	10.6814	9.7067	10.1353	0.1320	1.1785
4	10.8799	9.6671	10.2077	0.1203	1.5103
5	11.3305	9.8100	10.3131	0.1558	1.3258
6	10.5184	9.5910	10.0320	0.1330	1.1780
7	10.6862	9.6974	10.1445	0.1195	1.0779
8	11.0264	9.8620	10.2021	0.1100	1.2282
9	11.2915	9.9029	10.3626	0.1273	1.3227
10	10.6209	9.6930	10.1389	0.1341	1.2702
		Average	10.1789	0.1293	1.2698
		St Dev	0.0974	0.0120	0.1102

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.3642	3.1828	-2.2129	0.2150	0.3203	0.1673	2.2964	3.4203	1.7871
2	9.3925	3.1671	-1.9488	0.2212	0.3169	0.1912	2.3547	3.3742	2.0360
3	9.4072	3.1019	-2.1085	0.2148	0.3015	0.2081	2.2829	3.2048	2.2123
4	9.2778	3.3982	-2.5233	0.2194	0.3542	0.2163	2.3645	3.8172	2.3317
5	9.1805	3.8188	-2.6850	0.1774	0.4811	0.2187	1.9322	5.2408	2.3820
6	9.3487	3.0206	-1.9977	0.2138	0.2761	0.1565	2.2874	2.9530	1.6742
7	9.2323	3.3851	-2.4456	0.2030	0.3829	0.2490	2.1985	4.1479	2.6973
8	9.2675	3.5296	-2.3558	0.1927	0.3636	0.1769	2.0788	3.9238	1.9090
9	9.2042	3.9089	-2.6761	0.1588	0.4143	0.2106	1.7251	4.5008	2.2883
10	9.4158	2.8985	-2.3611	0.2119	0.3038	0.2122	2.2507	3.2261	2.2539

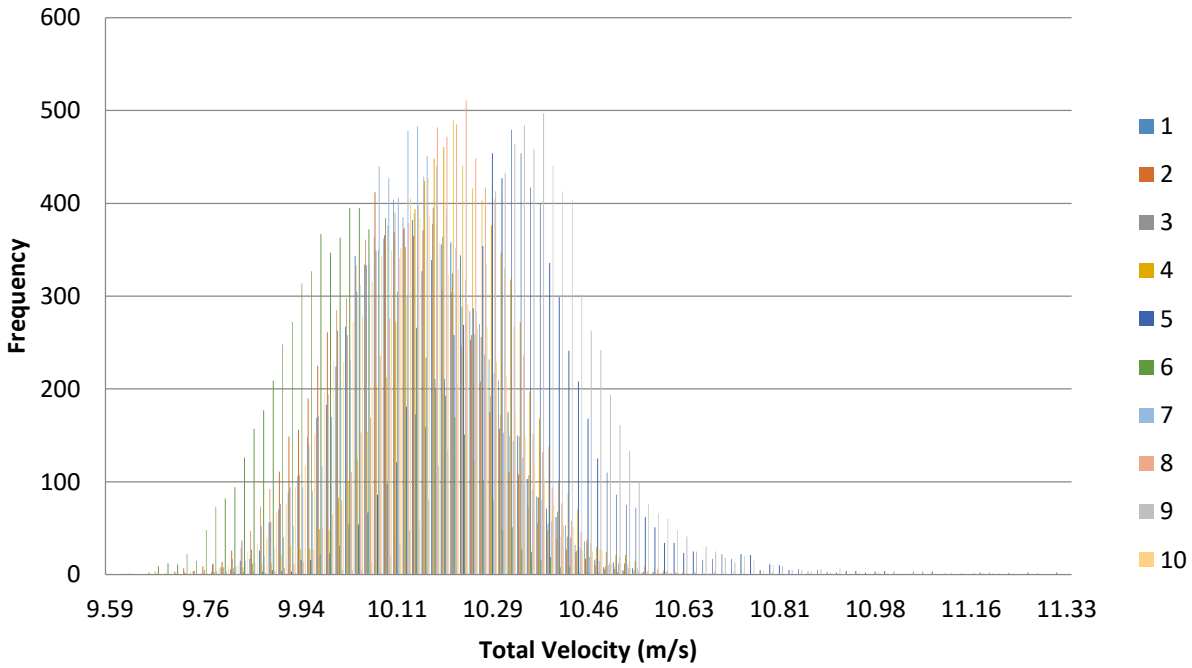


Figure 1. Velocity histogram for each interval (100 bins).

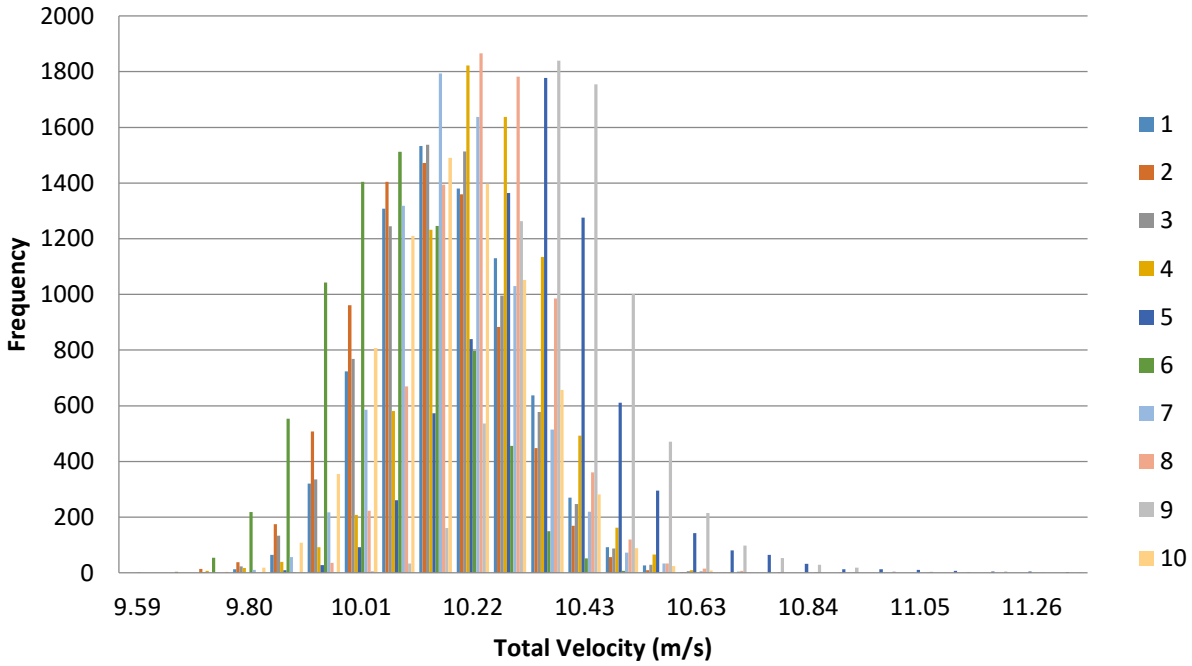
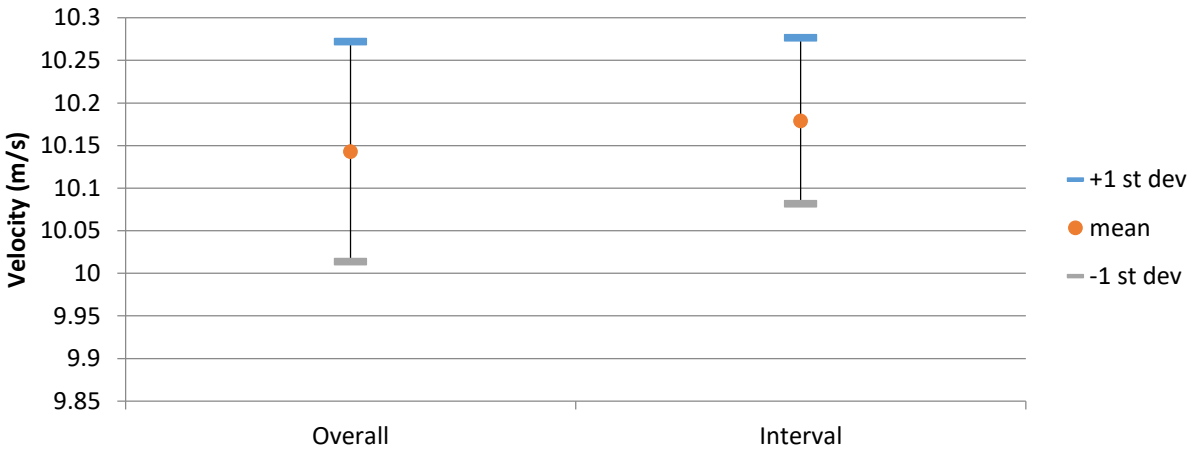
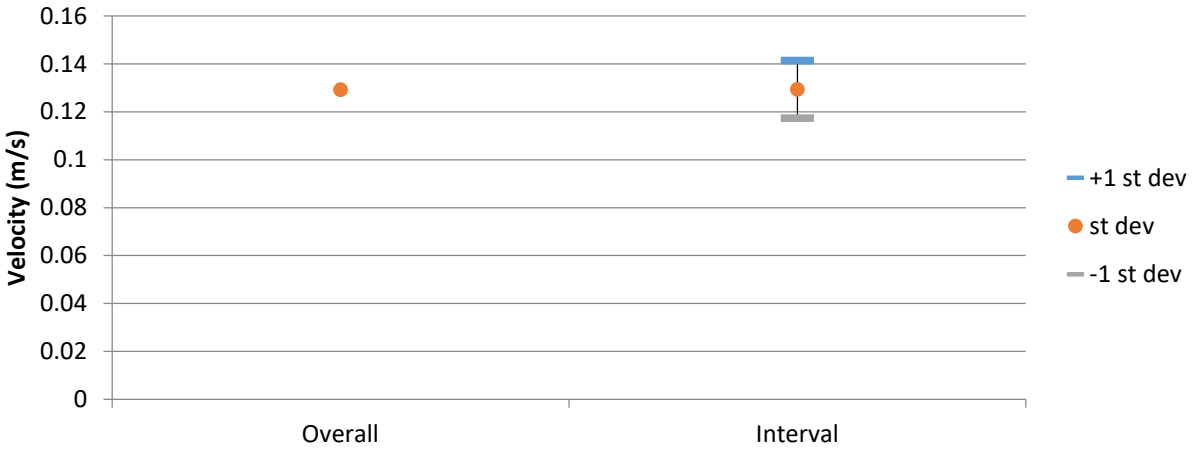


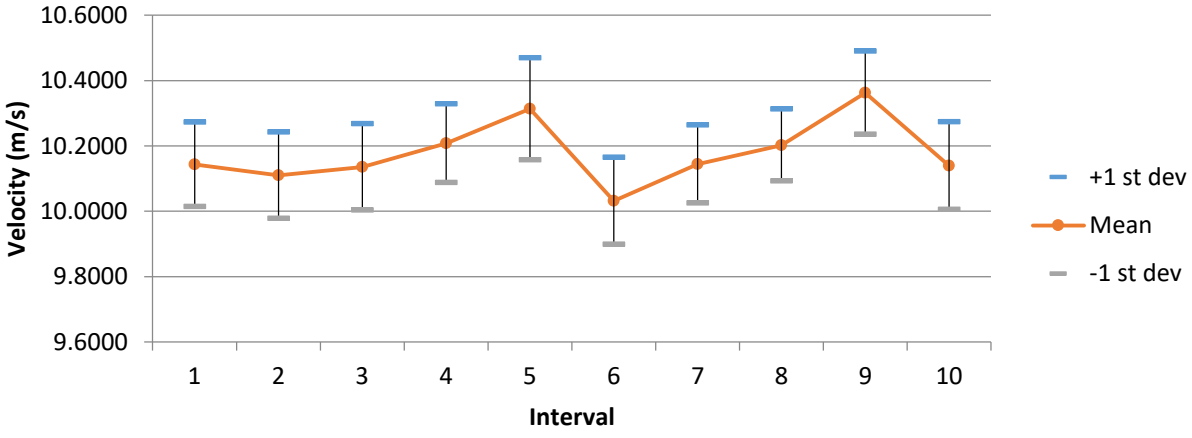
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 227
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 23-Aug-13
First Sample Time: 08:30:47.171

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.8611	10.3849	11.1076	0.1683
u	11.4000	9.8900	10.6975	0.1679
v	1.5400	-2.1200	-0.5629	0.4535
w	-1.4200	-4.3300	-2.8655	0.4563

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.6208	10.3849	11.0417	0.1578	1.6620
2	11.7577	10.4681	11.1395	0.1851	1.6670
3	11.8611	10.5521	11.2009	0.1867	1.4425
4	11.7408	10.4703	11.1653	0.1611	1.3272
5	11.5369	10.4902	11.0453	0.1466	1.2896
6	11.6855	10.4978	11.1213	0.1434	1.3483
7	11.5875	10.4521	11.0593	0.1491	1.4553
8	11.7298	10.4651	11.0467	0.1608	1.4064
9	11.6342	10.5030	11.1289	0.1565	1.2824
10	11.6822	10.5333	11.1270	0.1427	1.4313
		Average	11.1076	0.1590	1.4312
		St Dev	0.0561	0.0157	0.1304

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.7798	-1.1167	-2.0691	0.1746	0.3747	0.2005	1.6198	3.4758	1.8598
2	10.7615	-0.1625	-2.7508	0.1910	0.6060	0.5626	1.7747	5.6310	5.2280
3	10.6895	-0.3859	-3.2794	0.1647	0.3837	0.3886	1.5407	3.5895	3.6351
4	10.7498	-0.2868	-2.9764	0.1464	0.2886	0.2931	1.3619	2.6851	2.7263
5	10.7163	-0.4989	-2.6129	0.1414	0.1962	0.2125	1.3190	1.8312	1.9828
6	10.7243	-0.2562	-2.9182	0.1484	0.1880	0.2334	1.3837	1.7532	2.1761
7	10.6568	-0.6665	-2.8651	0.1421	0.1823	0.2381	1.3336	1.7103	2.2347
8	10.6076	-0.9098	-2.8986	0.1490	0.3778	0.3750	1.4046	3.5613	3.5355
9	10.5910	-0.8104	-3.2871	0.1565	0.4203	0.2103	1.4779	3.9685	1.9854
10	10.6985	-0.5353	-2.9973	0.1467	0.1631	0.2311	1.3717	1.5243	2.1601

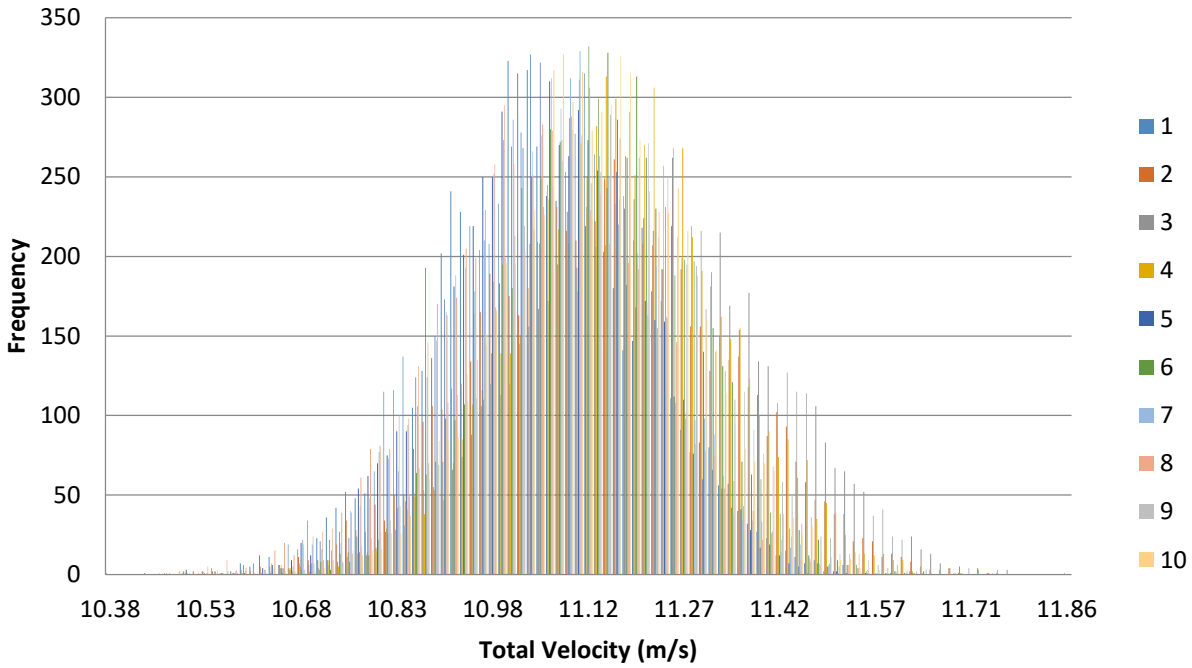


Figure 1. Velocity histogram for each interval (100 bins).

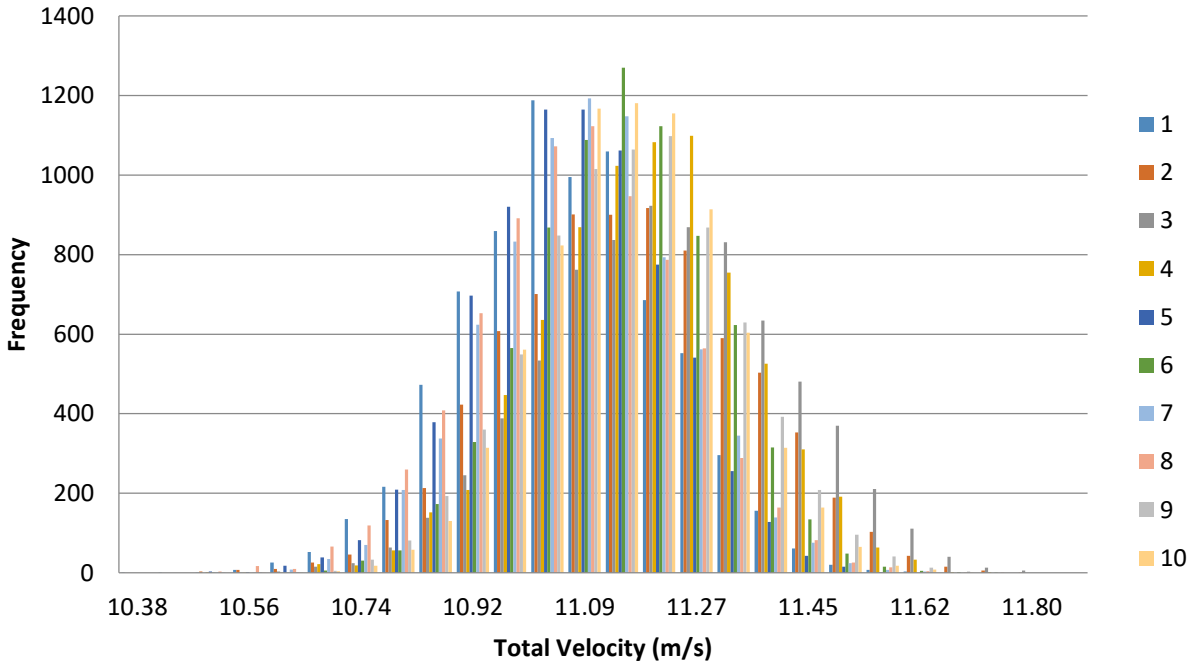
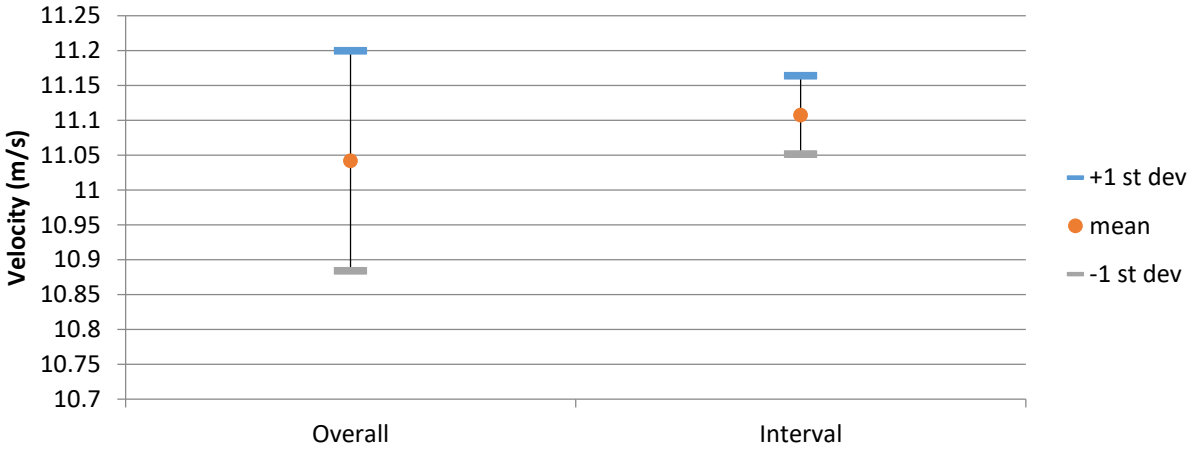
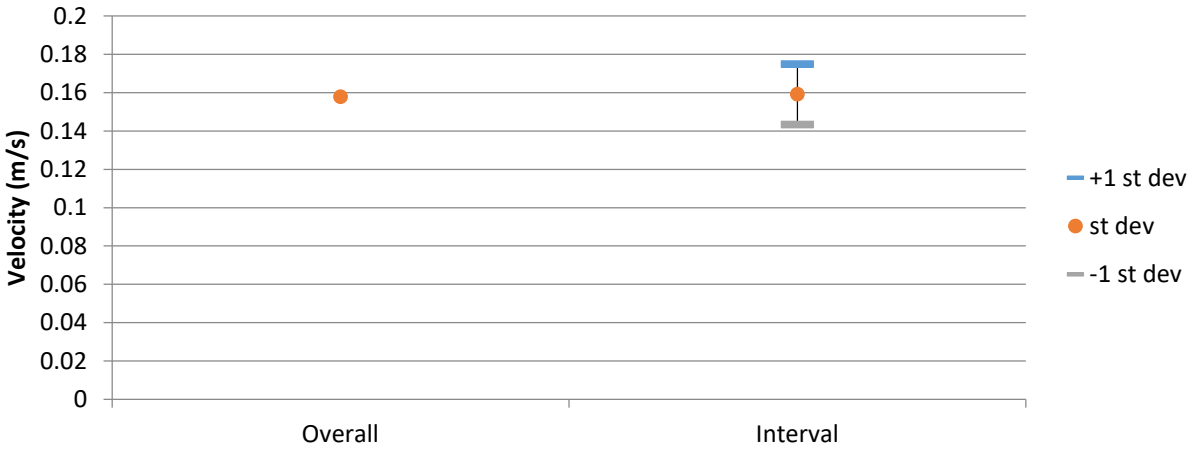


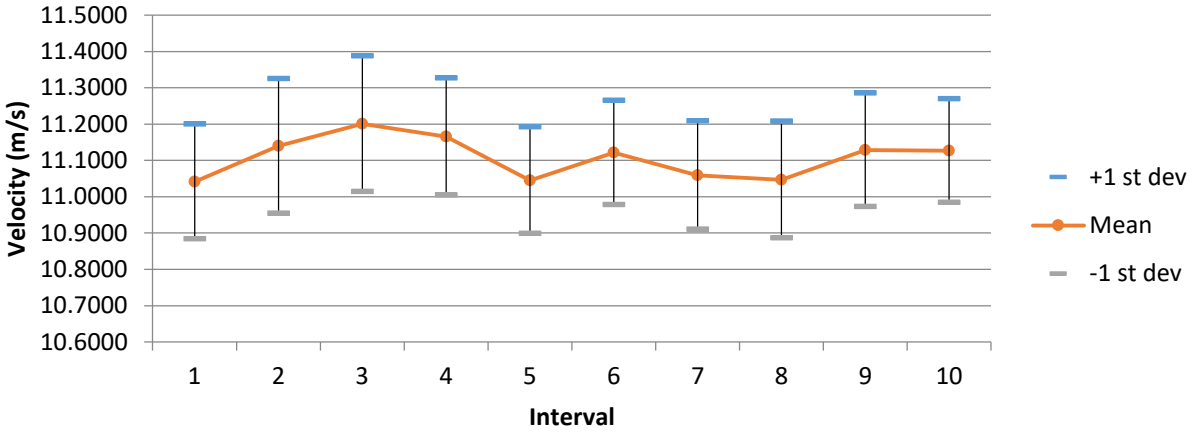
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 228
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 23-Aug-13
First Sample Time: 08:44:26.953

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	6.0103	5.4224	5.7074	0.0672
u	5.9900	5.2900	5.5939	0.0909
v	0.7850	-0.6690	0.0157	0.1982
w	0.2290	-1.8800	-1.0660	0.3198

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	6.0103	5.4651	5.7343	0.0666	1.1603
2	5.9704	5.5141	5.7357	0.0665	1.1109
3	5.9430	5.4556	5.7051	0.0634	1.1106
4	5.9123	5.4264	5.6720	0.0630	1.0775
5	5.9417	5.4795	5.7090	0.0615	1.0775
6	5.9412	5.4224	5.7241	0.0617	1.0503
7	5.8819	5.4246	5.6782	0.0596	1.0704
8	5.8737	5.4557	5.6716	0.0607	1.0669
9	5.9371	5.5094	5.7090	0.0609	1.0777
10	6.0078	5.5135	5.7346	0.0618	1.0964
		Average	5.7074	0.0626	1.0899
		St Dev	0.0257	0.0024	0.0296

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.6789	-0.0198	-0.6745	0.0744	0.1491	0.3929	1.3108	2.6253	6.9191
2	5.6269	-0.1121	-1.0602	0.0883	0.1499	0.2725	1.5697	2.6640	4.8428
3	5.5117	-0.0800	-1.4359	0.0651	0.2298	0.2171	1.1803	4.1701	3.9384
4	5.5698	0.1030	-1.0320	0.0706	0.2116	0.1673	1.2674	3.7992	3.0032
5	5.5891	0.0705	-1.1360	0.0707	0.1633	0.1775	1.2651	2.9214	3.1750
6	5.6474	0.0767	-0.8804	0.0791	0.1753	0.2409	1.4004	3.1044	4.2664
7	5.5145	0.0921	-1.3355	0.0625	0.1221	0.1553	1.1340	2.2144	2.8162
8	5.5716	-0.0106	-1.0073	0.0740	0.2705	0.1873	1.3276	4.8542	3.3618
9	5.6363	0.0214	-0.8971	0.0656	0.1031	0.0927	1.1633	1.8287	1.6451
10	5.5932	0.0160	-1.2010	0.0900	0.2168	0.3286	1.6091	3.8759	5.8752

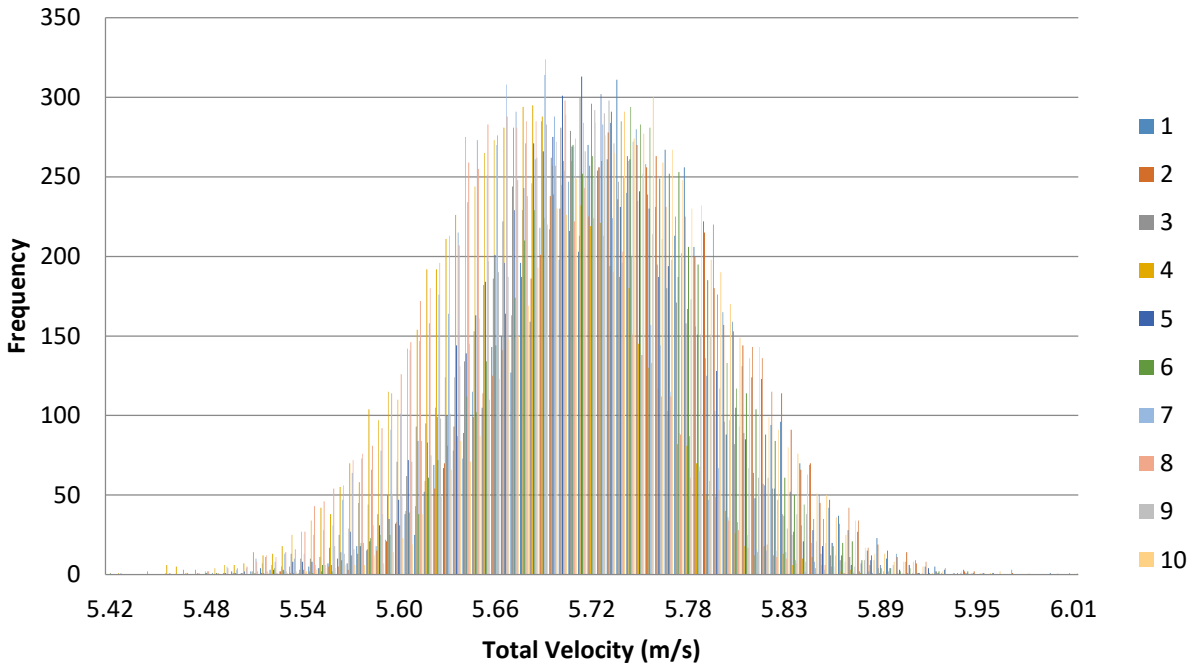


Figure 1. Velocity histogram for each interval (100 bins).

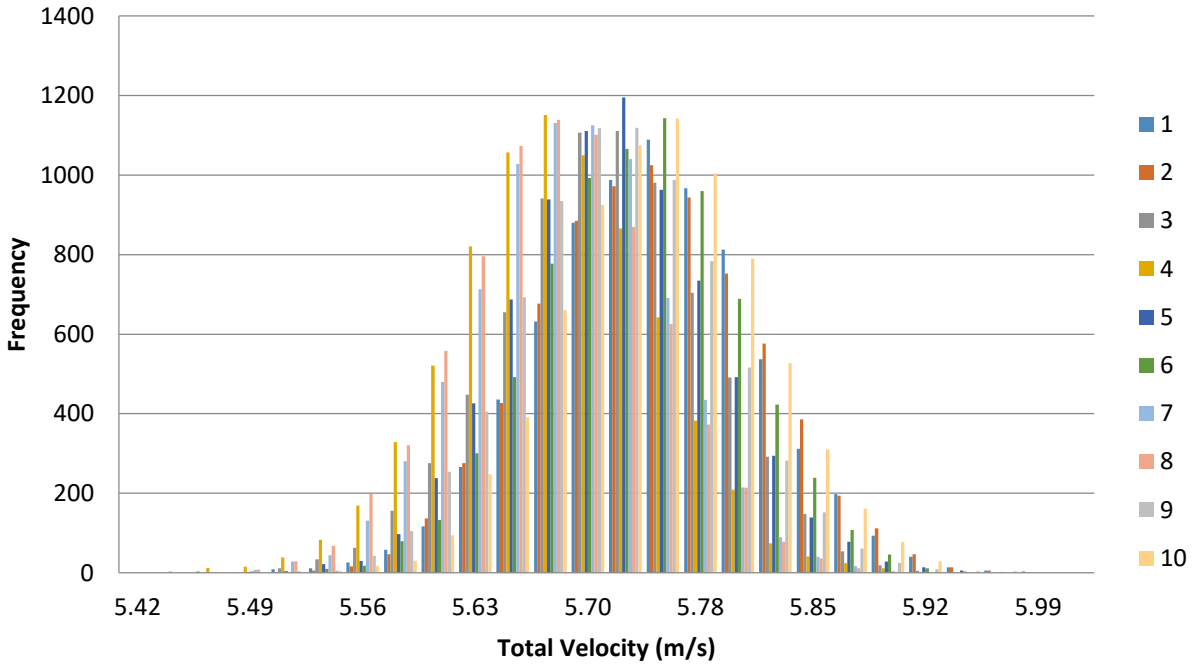
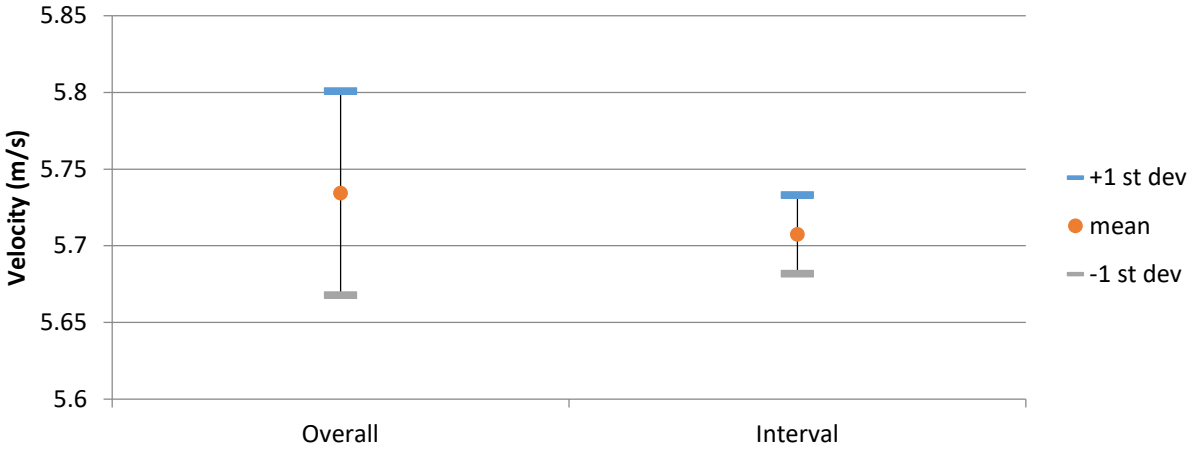
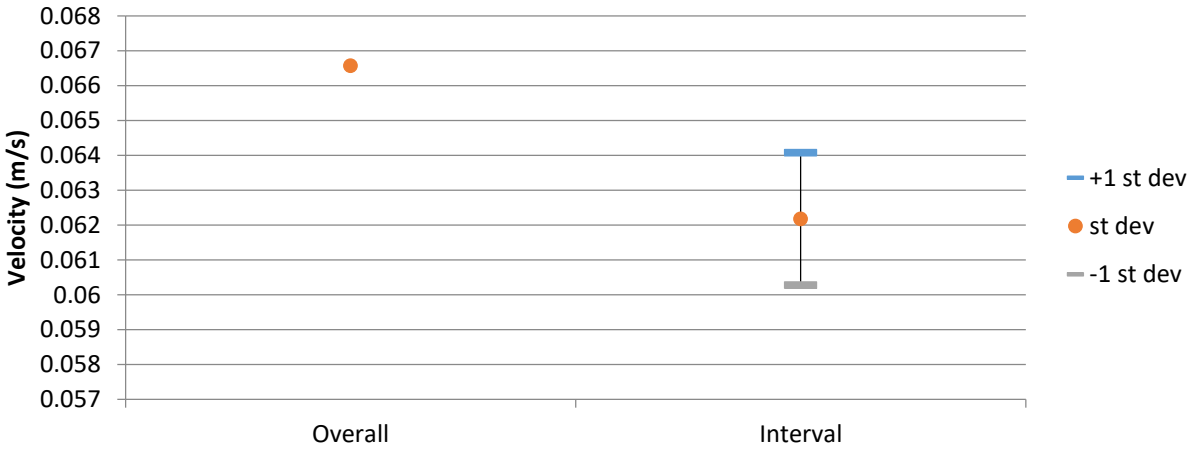


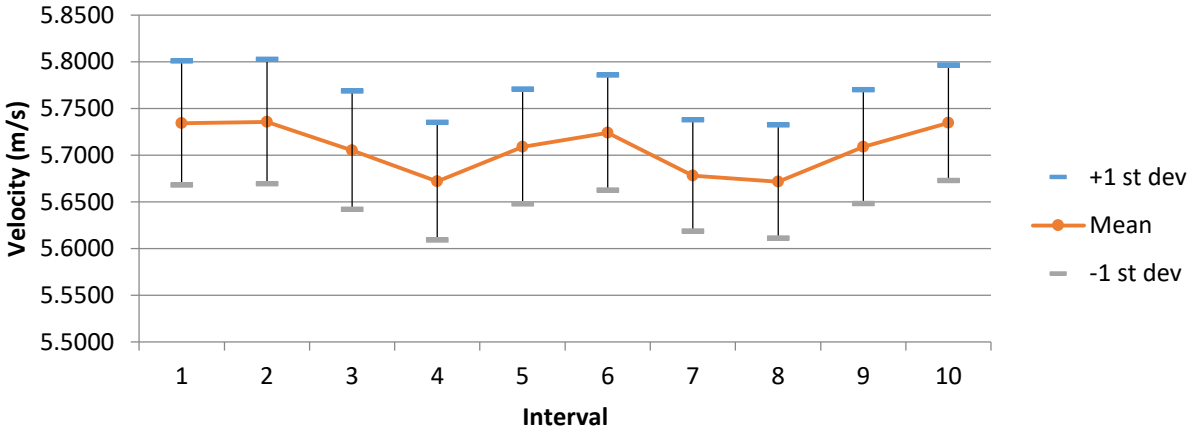
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 229
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E4
First Sample Date: 23-Aug-13
First Sample Time: 08:46:52.562

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	28.6059	23.6181	25.7475	0.3549
u	28.6000	23.5000	25.6511	0.3551
v	1.4400	-3.3200	-1.0397	0.6211
w	0.5250	-5.0900	-1.7636	0.6159

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	27.9864	24.5351	25.9815	0.3289	1.1551
2	28.6059	23.9344	25.8552	0.2987	1.2322
3	27.4797	24.3032	25.7857	0.3177	1.1463
4	27.7280	23.6620	25.7474	0.2951	1.4807
5	27.3942	23.6181	25.6856	0.3803	1.5617
6	27.6346	23.6491	25.6562	0.4007	1.4265
7	27.0183	23.9357	25.6165	0.3654	1.3762
8	27.3166	23.6657	25.6625	0.3532	1.2165
9	27.4459	24.2330	25.7321	0.3130	1.2778
10	27.7378	23.9318	25.7524	0.3291	1.3136
		Average	25.7475	0.3382	1.3187
		St Dev	0.1078	0.0354	0.1328

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	25.8839	-1.4199	-1.5253	0.3249	0.6810	0.5084	1.2553	2.6310	1.9640
2	25.7754	-1.2822	-1.3772	0.2979	0.5458	0.5319	1.1558	2.1174	2.0635
3	25.6985	-1.3455	-1.4689	0.3160	0.4947	0.5264	1.2295	1.9251	2.0484
4	25.6773	-0.6918	-1.5712	0.2943	0.6549	0.4798	1.1463	2.5506	1.8687
5	25.5751	-0.9232	-2.0134	0.3764	0.5281	0.6958	1.4716	2.0649	2.7205
6	25.5040	-1.1568	-2.3908	0.3920	0.5428	0.6681	1.5370	2.1282	2.6198
7	25.5148	-1.1446	-1.8423	0.3628	0.4687	0.5303	1.4220	1.8371	2.0782
8	25.5733	-1.0658	-1.6932	0.3525	0.5679	0.4972	1.3786	2.2208	1.9443
9	25.6567	-0.6527	-1.7173	0.3105	0.5622	0.4321	1.2101	2.1913	1.6843
10	25.6520	-0.7141	-2.0371	0.3283	0.5274	0.4750	1.2800	2.0560	1.8515

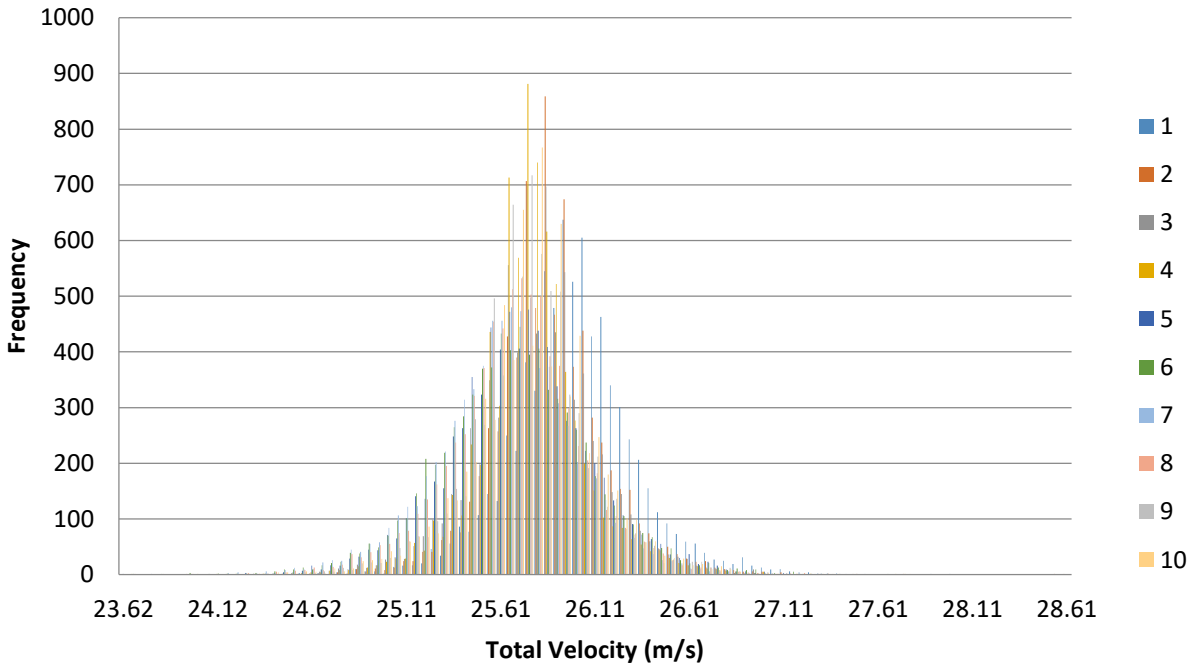


Figure 1. Velocity histogram for each interval (100 bins).

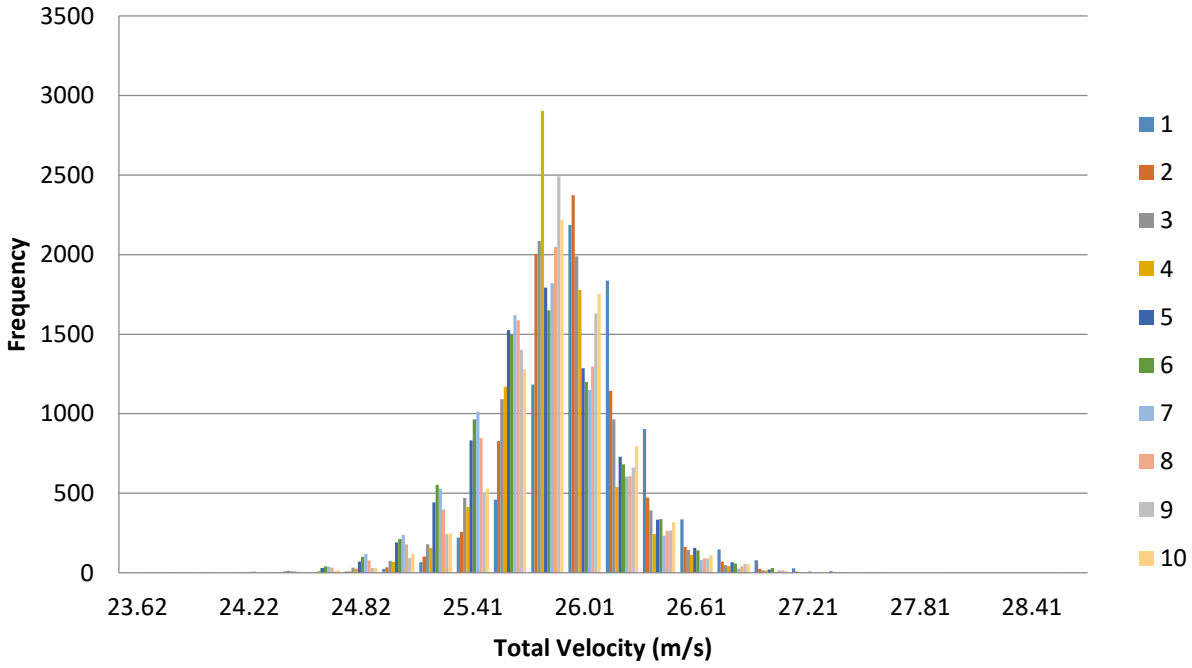
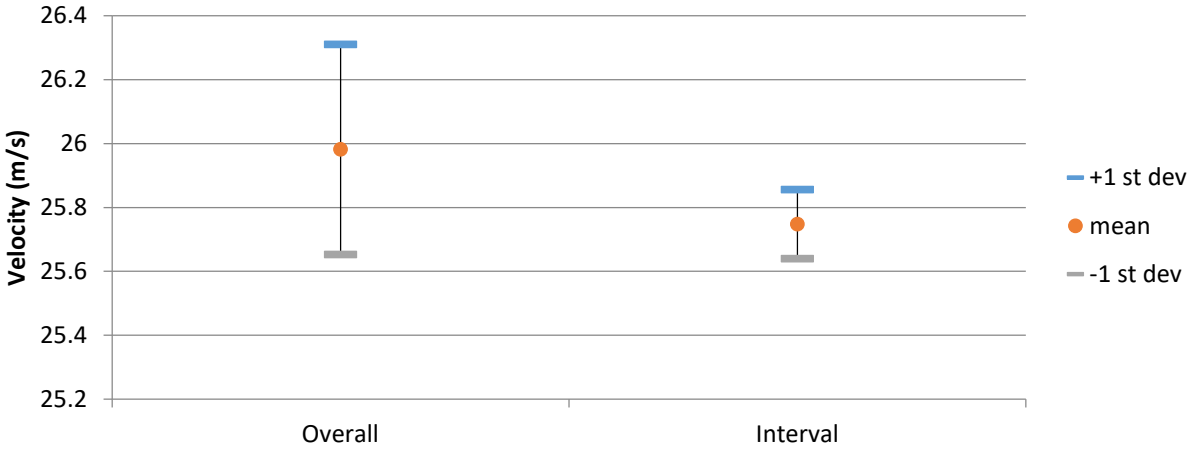
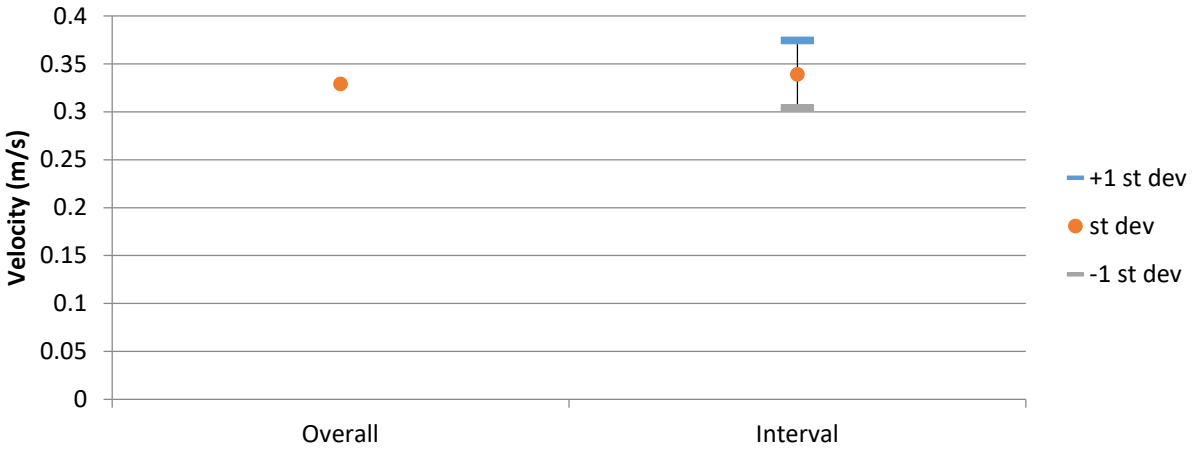


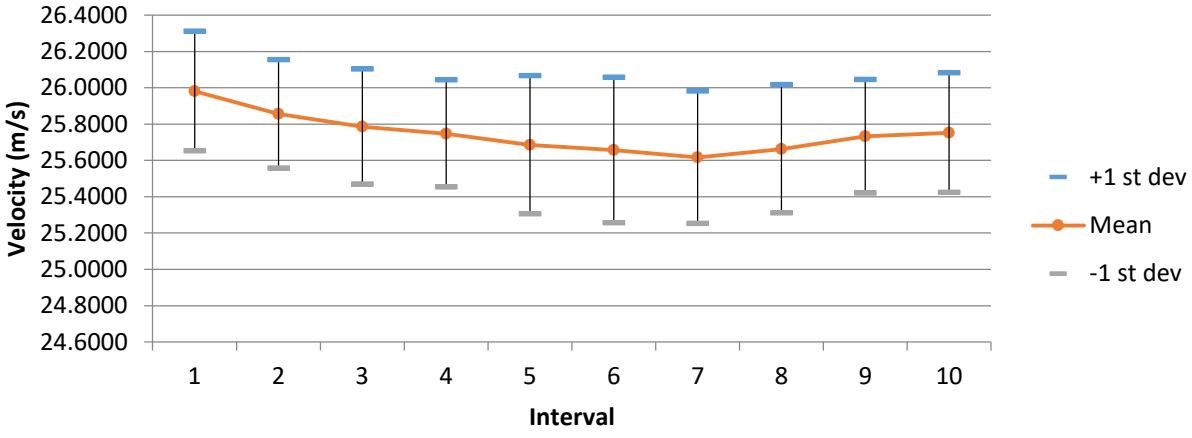
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 230
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E4
First Sample Date: 23-Aug-13
First Sample Time: 08:48:48.140

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.6079	5.0094	5.3463	0.0661
u	5.5900	4.9800	5.2710	0.0666
v	0.4640	-1.3900	-0.8320	0.1877
w	0.1290	-0.5720	-0.2542	0.0897

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.5912	5.0474	5.3273	0.0756	1.2561
2	5.5607	5.0912	5.3404	0.0671	1.2379
3	5.5921	5.1212	5.3487	0.0662	1.1724
4	5.6079	5.1235	5.3487	0.0627	1.1603
5	5.5889	5.1307	5.3501	0.0621	1.2052
6	5.5820	5.1120	5.3463	0.0644	1.2165
7	5.5719	5.0094	5.3382	0.0649	1.1982
8	5.5795	5.1339	5.3556	0.0642	1.1888
9	5.5643	5.0765	5.3564	0.0637	1.1895
10	5.5792	5.0931	5.3517	0.0637	1.2242
		Average	5.3463	0.0655	1.2049
		St Dev	0.0089	0.0039	0.0279

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.2865	-0.5223	-0.1940	0.0785	0.3281	0.1198	1.4845	6.2057	2.2668
2	5.2437	-0.9745	-0.2341	0.0650	0.1027	0.0896	1.2404	1.9579	1.7092
3	5.2559	-0.9339	-0.2718	0.0715	0.1638	0.1025	1.3603	3.1166	1.9500
4	5.2698	-0.8507	-0.3279	0.0610	0.0736	0.0418	1.1571	1.3972	0.7923
5	5.2741	-0.8476	-0.2870	0.0595	0.0711	0.0472	1.1280	1.3484	0.8946
6	5.2745	-0.8241	-0.2659	0.0630	0.0946	0.0628	1.1943	1.7941	1.1914
7	5.2776	-0.7706	-0.1886	0.0626	0.0996	0.0630	1.1861	1.8873	1.1930
8	5.2926	-0.7886	-0.1929	0.0610	0.0909	0.0676	1.1534	1.7169	1.2764
9	5.2846	-0.8231	-0.2722	0.0614	0.0849	0.0775	1.1620	1.6062	1.4667
10	5.2505	-0.9842	-0.3078	0.0622	0.0801	0.0541	1.1852	1.5253	1.0311

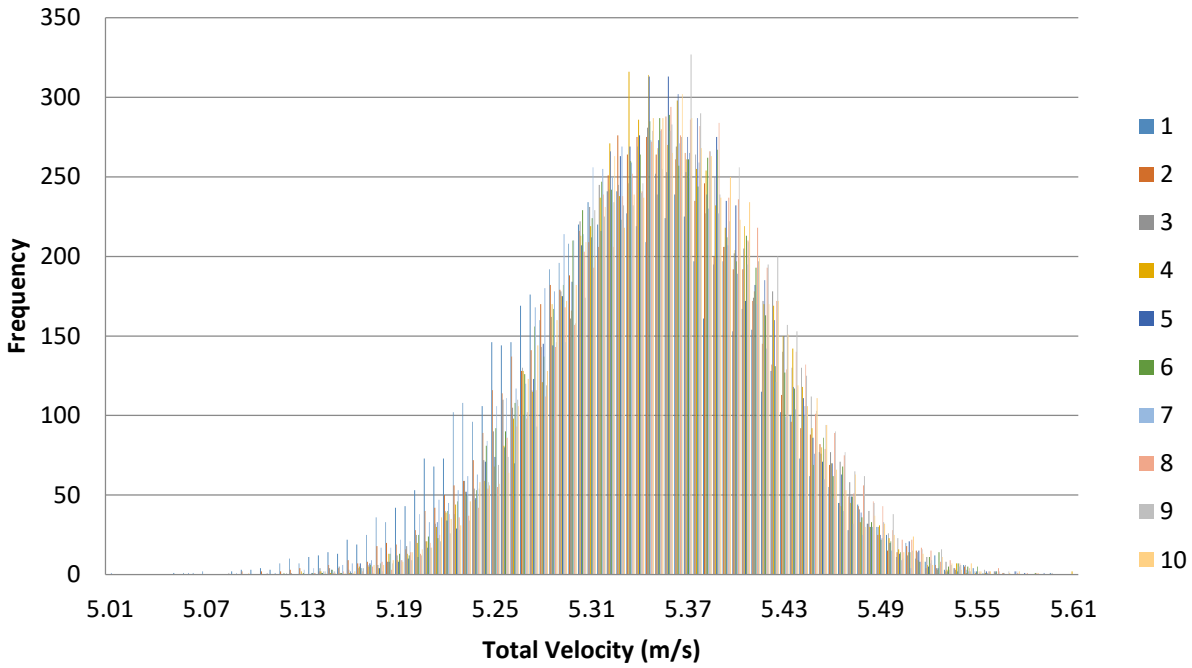


Figure 1. Velocity histogram for each interval (100 bins).

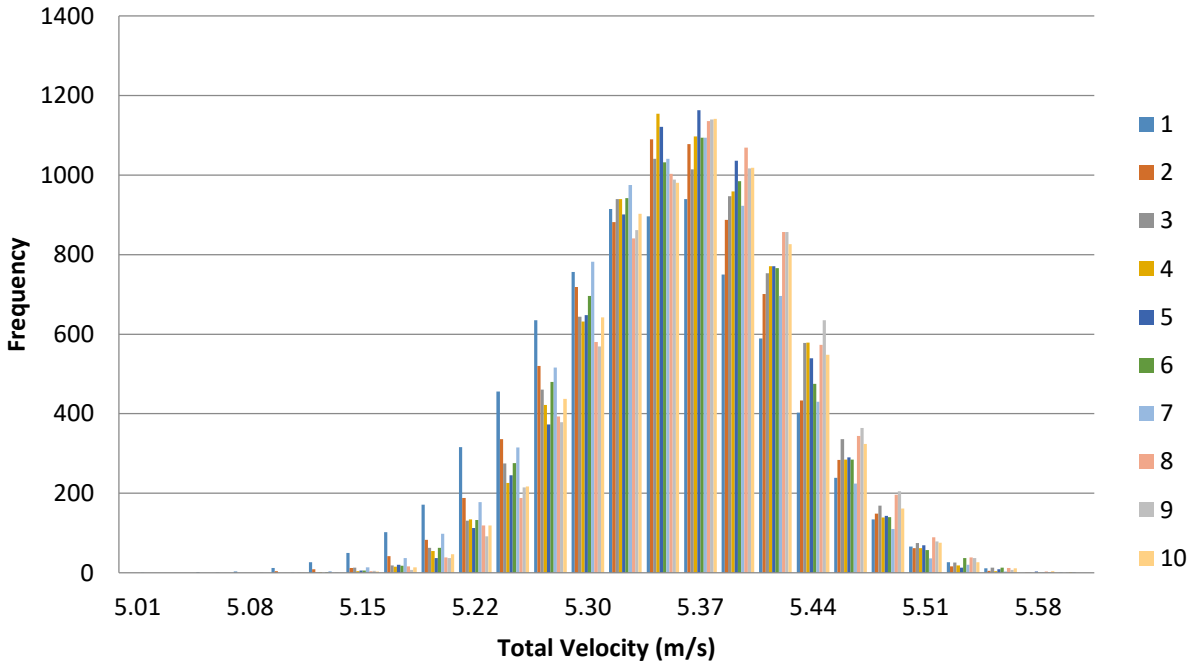
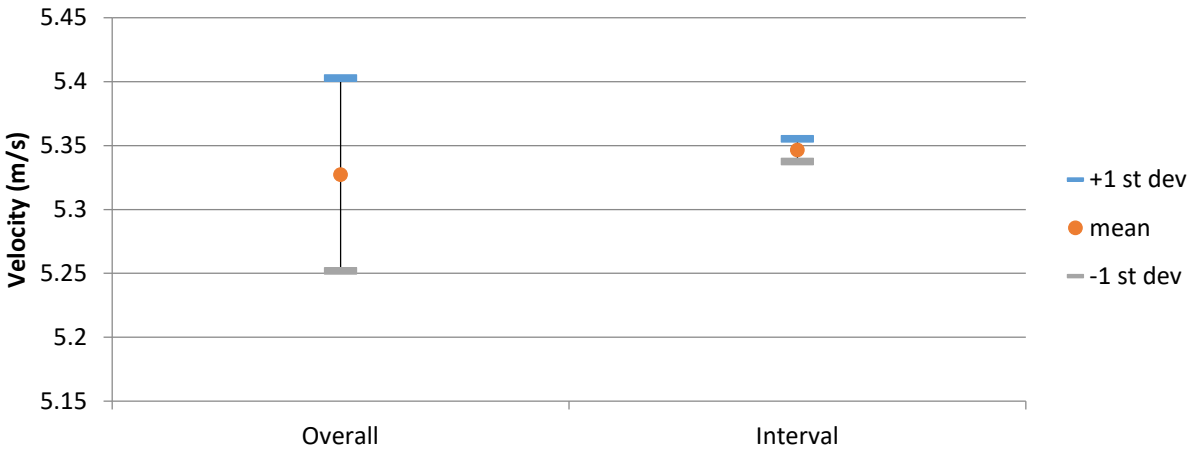
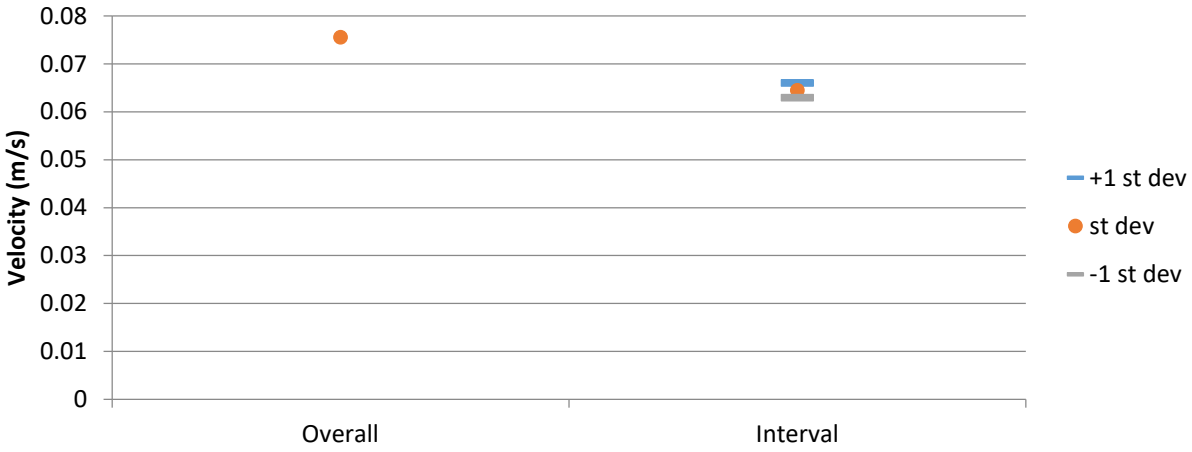


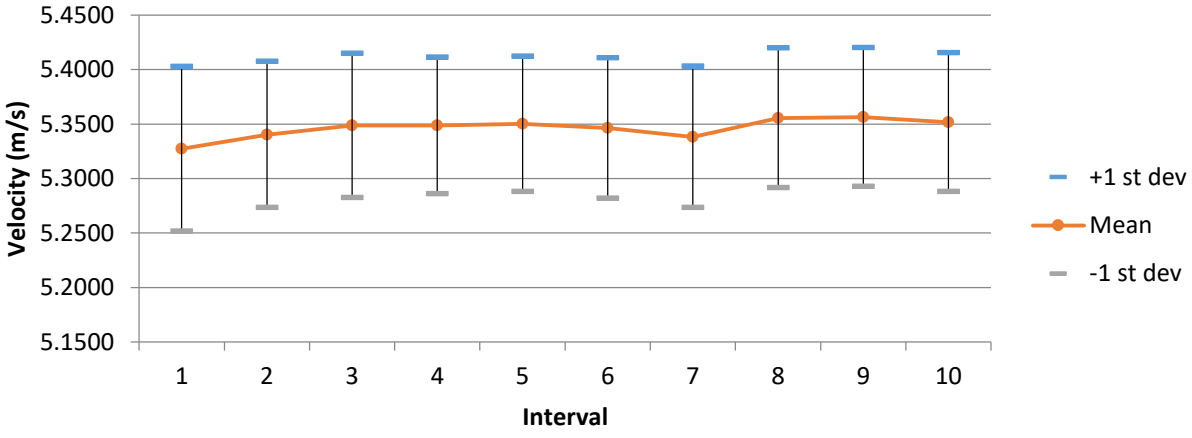
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 231
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E2
First Sample Date: 23-Aug-13
First Sample Time: 08:50:48.531

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	6.6988	5.8254	6.1789	0.1098
u	6.3100	4.8600	5.6120	0.1862
v	0.8730	-0.8750	-0.0220	0.2830
w	-1.9800	-3.2700	-2.5571	0.2061

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	6.5755	5.8738	6.1762	0.0827	1.3978
2	6.4809	5.8531	6.1398	0.0858	1.4319
3	6.4679	5.8461	6.1452	0.0880	1.3415
4	6.5235	5.8663	6.1344	0.0823	1.4608
5	6.4817	5.8329	6.1423	0.0897	1.3242
6	6.4893	5.8254	6.1247	0.0811	1.8895
7	6.6497	5.8709	6.1960	0.1171	1.6717
8	6.5627	5.8582	6.1824	0.1034	1.7783
9	6.6988	5.8764	6.2838	0.1117	1.8152
10	6.5816	5.8692	6.2639	0.1137	1.5465
		Average	6.1789	0.0956	1.5658
		St Dev	0.0553	0.0143	0.1974

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.6294	0.2805	-2.5120	0.1227	0.1760	0.1676	2.1803	3.1257	2.9768
2	5.4872	0.3959	-2.7112	0.1557	0.1737	0.1832	2.8378	3.1651	3.3386
3	5.5134	0.1648	-2.6981	0.1454	0.1488	0.1502	2.6364	2.6982	2.7241
4	5.5285	0.0894	-2.6459	0.1294	0.1756	0.1333	2.3414	3.1757	2.4104
5	5.5710	-0.1902	-2.5700	0.1391	0.1330	0.1486	2.4973	2.3879	2.6681
6	5.4719	-0.0292	-2.7364	0.1417	0.1926	0.1732	2.5904	3.5206	3.1660
7	5.6229	-0.1461	-2.5799	0.1989	0.1713	0.2030	3.5368	3.0468	3.6096
8	5.6819	-0.1869	-2.4186	0.1403	0.1602	0.1381	2.4694	2.8194	2.4297
9	5.8174	-0.2942	-2.3477	0.1402	0.1614	0.1108	2.4102	2.7737	1.9042
10	5.7961	-0.3038	-2.3510	0.1269	0.1147	0.0797	2.1892	1.9789	1.3749

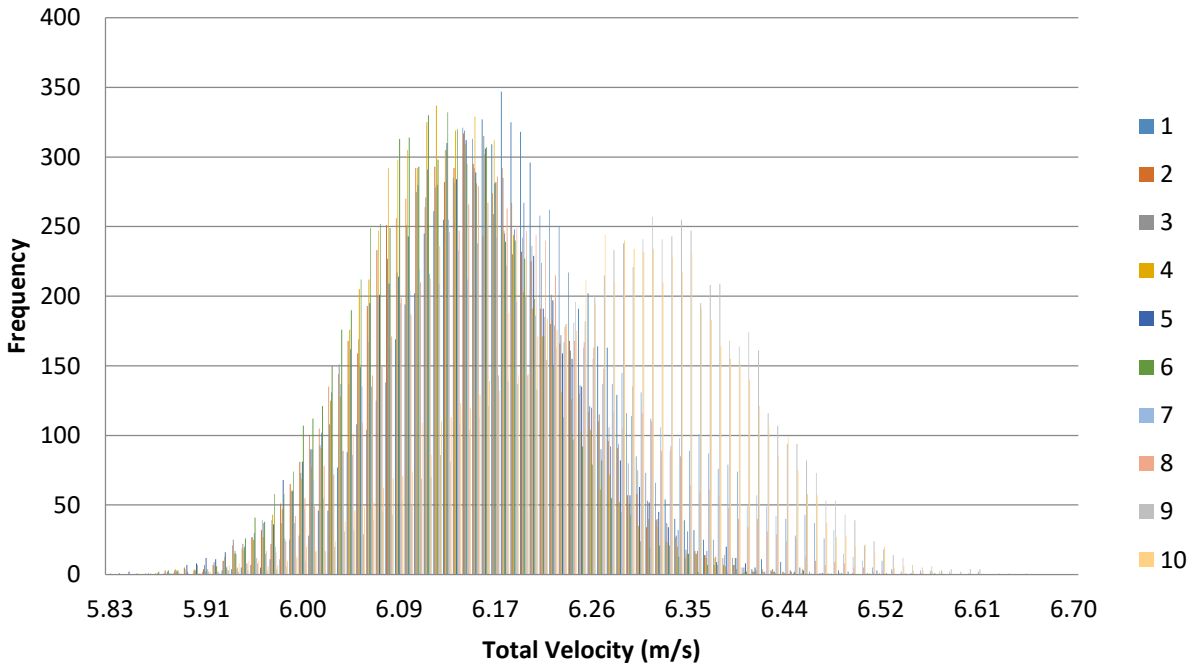


Figure 1. Velocity histogram for each interval (100 bins).

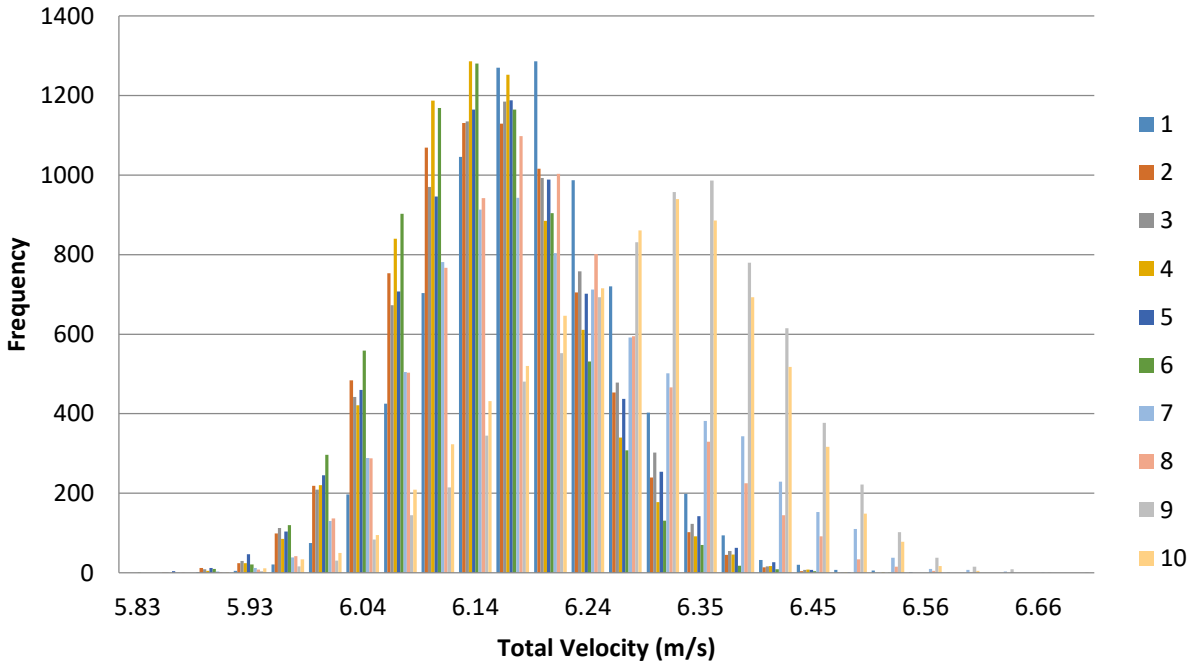
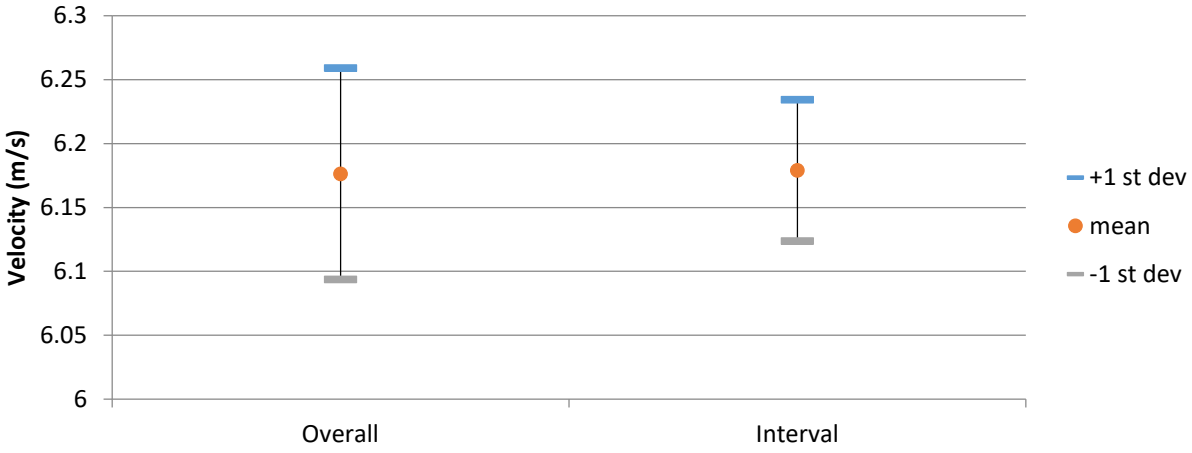
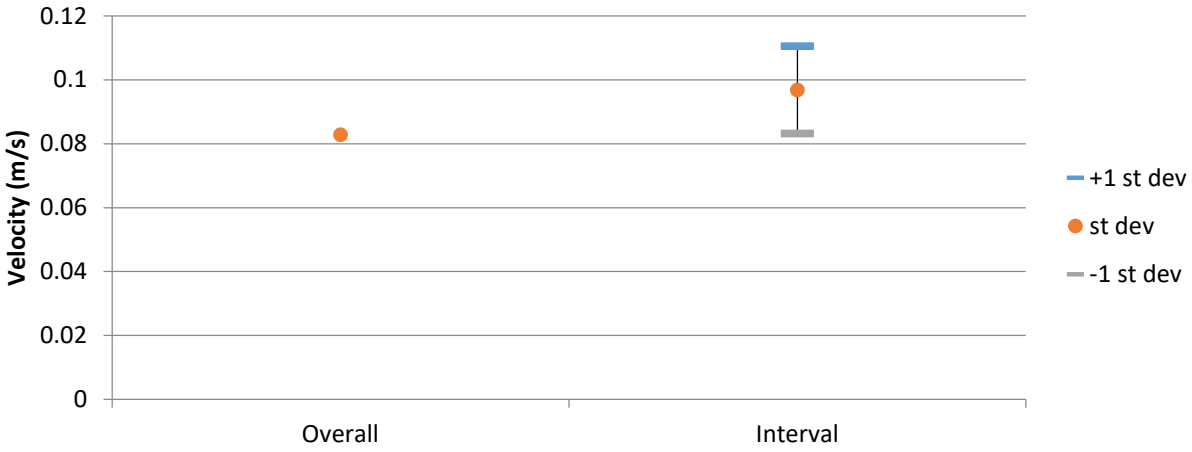


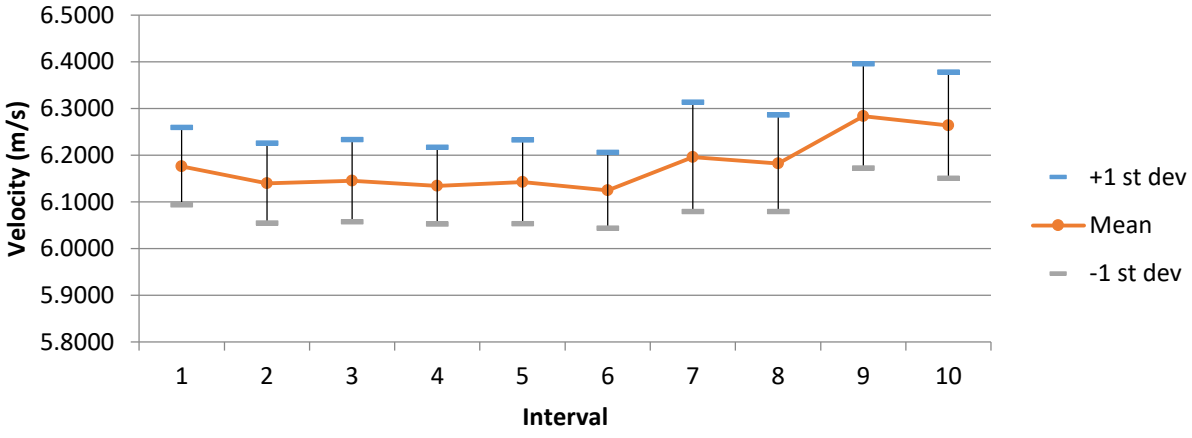
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 232
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: A2
First Sample Date: 23-Aug-13
First Sample Time: 08:54:06.500

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.3692	4.2026	4.8671	0.2199
u	4.1900	2.8000	3.6333	0.2555
v	-2.5200	-3.5200	-3.0056	0.1288
w	-0.3150	-1.8500	-1.1823	0.1534

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	5.3196	4.7377	5.0766	0.0647	1.2752	0	0.00 %
2	5.2771	4.5763	5.0880	0.0769	1.5104	0	0.00 %
3	5.1690	4.3497	4.7039	0.1171	2.4888	0	0.00 %
4	5.2349	4.3785	5.0027	0.1149	2.2972	0	0.00 %
5	5.1784	4.2763	4.7568	0.1995	4.1935	0	0.00 %
6	5.2114	4.2026	4.7801	0.1807	3.7804	0	0.00 %
7	5.3683	4.2532	5.0122	0.2133	4.2546	0	0.00 %
8	5.3251	4.2983	4.8244	0.2122	4.3984	7	0.06 %
9	4.9447	4.3079	4.6250	0.0925	2.0011	12	0.10 %
10	5.3692	4.3549	4.8012	0.1783	3.7129	2	0.02 %
		Average	4.8671	0.1450	2.9913		
		St dev	0.1560	0.0548	1.1409		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	3.9236	-3.0148	-1.1273	0.0688	0.0857	0.0994	1.7532	2.1841	2.5331
2	3.9146	-3.0040	-1.2354	0.0902	0.0750	0.0784	2.3035	1.9160	2.0036
3	3.4906	-2.9074	-1.2070	0.1671	0.1004	0.0893	4.7877	2.8764	2.5588
4	3.7457	-3.1292	-1.0880	0.1224	0.0947	0.0992	3.2682	2.5272	2.6474
5	3.5449	-2.9408	-1.1754	0.2089	0.1318	0.1000	5.8921	3.7178	2.8209
6	3.5740	-2.9726	-1.0914	0.2066	0.1273	0.1495	5.7805	3.5613	4.1834
7	3.7610	-3.1218	-1.0858	0.1928	0.1186	0.2157	5.1260	3.1535	5.7339
8	3.5631	-3.0196	-1.1948	0.2394	0.1093	0.0969	6.7180	3.0672	2.7196
9	3.3090	-2.9145	-1.3811	0.1342	0.0979	0.1440	4.0549	2.9595	4.3529
10	3.5055	-3.0311	-1.2372	0.2185	0.1086	0.1296	6.2335	3.0989	3.6965

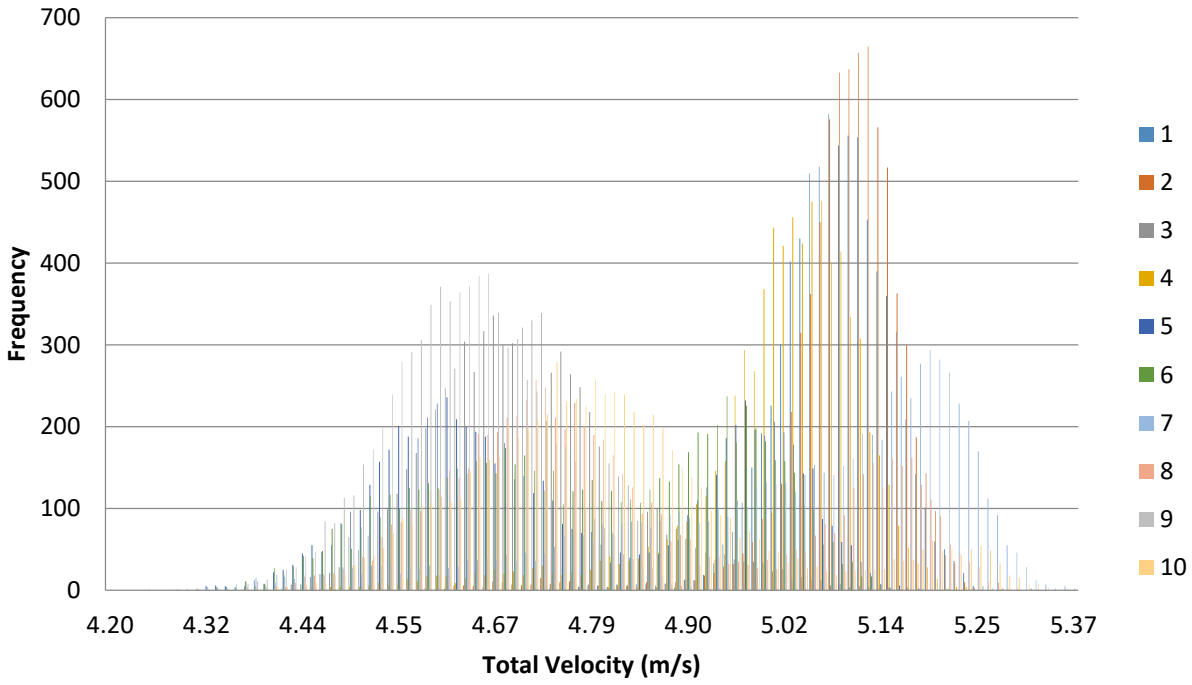


Figure 1. Velocity histogram for each interval (100 bins).

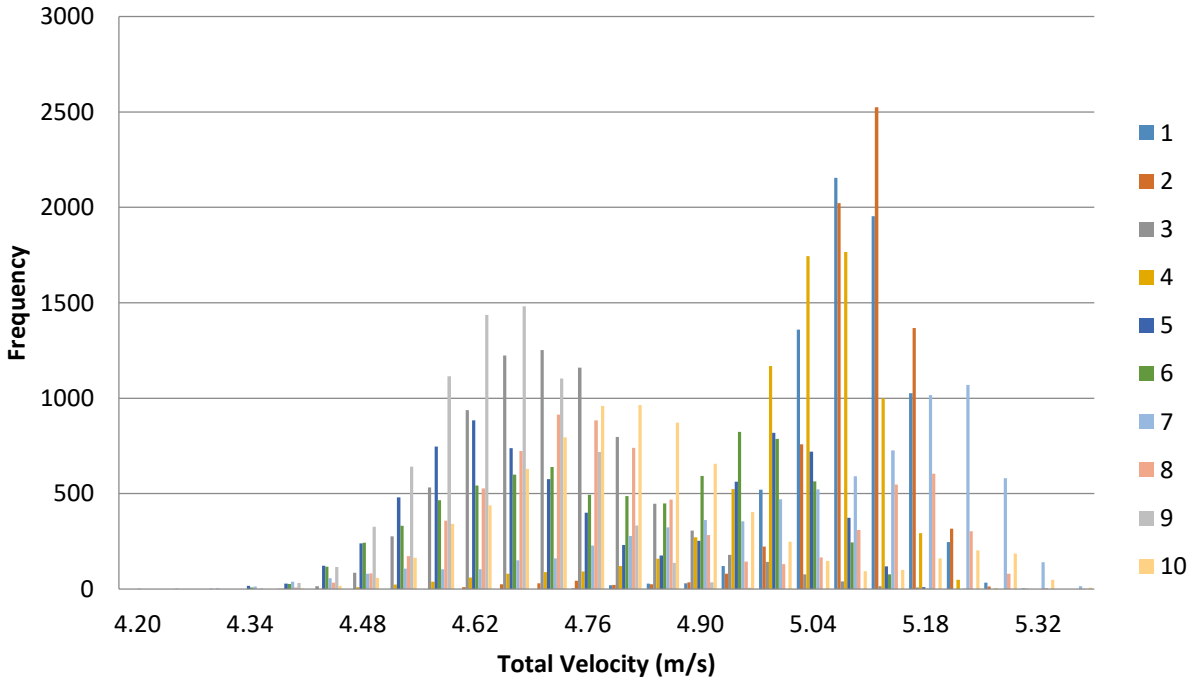
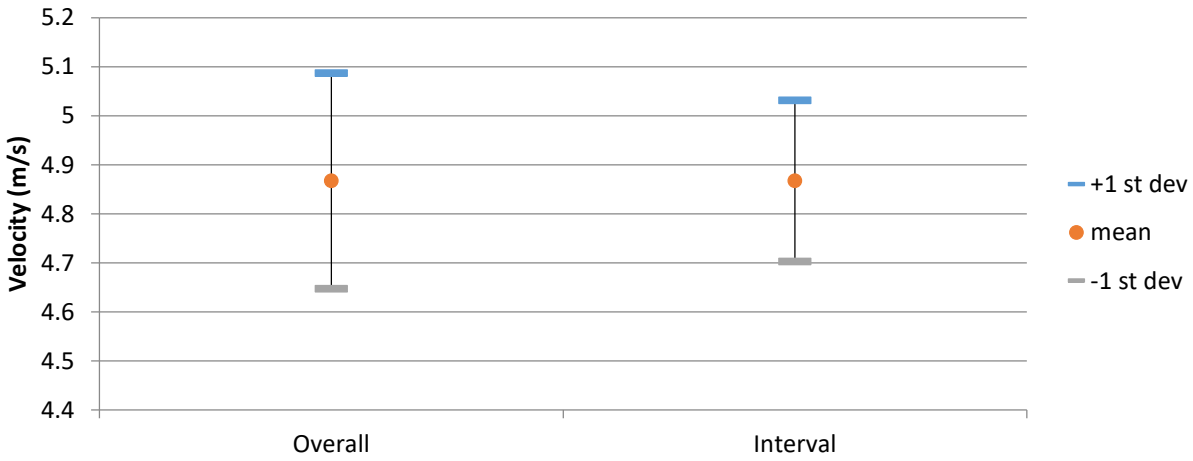
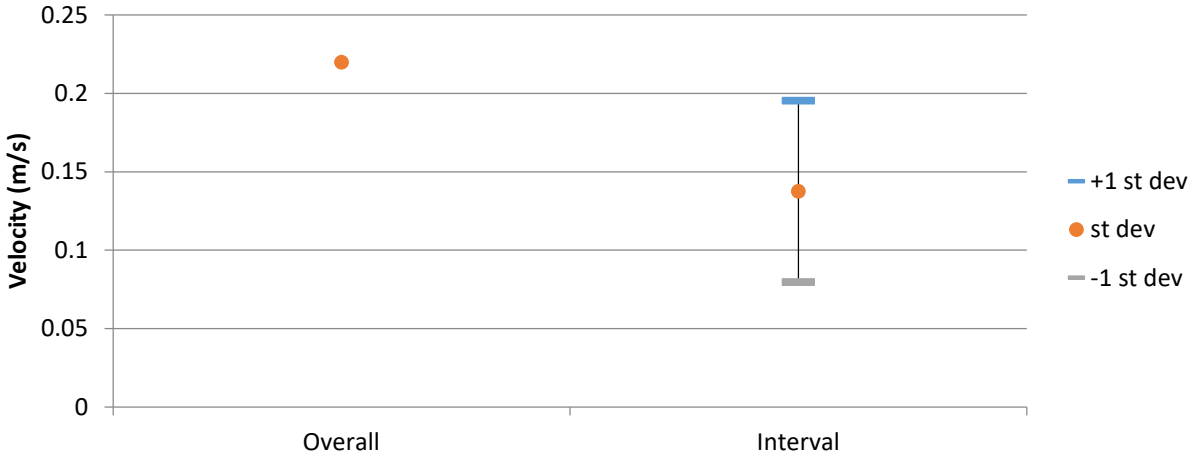


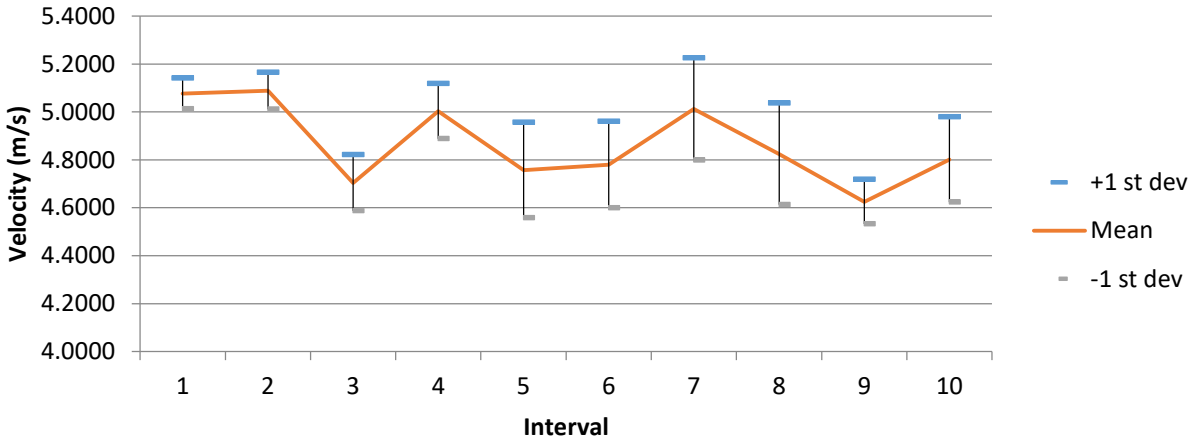
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 233
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: A3
First Sample Date: 23-Aug-13
First Sample Time: 08:55:44.312

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.6880	4.0767	4.7451	0.3470
u	4.3000	2.8400	3.4391	0.2915
v	-2.7900	-3.7500	-3.2044	0.1720
w	0.0620	-1.4500	-0.5862	0.2868

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	5.1210	4.1630	4.4755	0.1233	2.7545	0	0.00 %
2	5.1879	4.1748	4.5749	0.1699	3.7130	0	0.00 %
3	5.3328	4.1524	4.6493	0.2068	4.4485	0	0.00 %
4	5.3398	4.2950	4.8070	0.2035	4.2335	0	0.00 %
5	4.9220	4.1156	4.4186	0.1258	2.8481	1	0.01 %
6	5.0463	4.0767	4.3398	0.0924	2.1285	0	0.00 %
7	5.4868	4.2054	4.8387	0.2805	5.7962	0	0.00 %
8	5.6137	4.3907	5.1396	0.1715	3.3372	0	0.00 %
9	5.6651	4.4264	5.1865	0.2307	4.4481	0	0.00 %
10	5.6880	4.3793	5.0216	0.2626	5.2293	31	0.25 %
		Average	4.7452	0.1867	3.8937		
		St dev	0.2866	0.0586	1.0947		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	3.2466	-3.0511	-0.4134	0.1037	0.0787	0.0907	3.1947	2.4241	2.7928
2	3.3128	-3.1111	-0.5114	0.1422	0.0936	0.1217	4.2930	2.8262	3.6725
3	3.3537	-3.1686	-0.5496	0.1855	0.1003	0.1577	5.5300	2.9902	4.7023
4	3.5064	-3.2186	-0.6500	0.1911	0.0993	0.1587	5.4488	2.8311	4.5259
5	3.1744	-3.0568	-0.2880	0.0894	0.1126	0.1243	2.8150	3.5458	3.9156
6	3.0999	-3.0281	-0.1943	0.0956	0.0830	0.0968	3.0843	2.6776	3.1242
7	3.4895	-3.2859	-0.6262	0.2584	0.1183	0.2115	7.4061	3.3892	6.0610
8	3.8094	-3.3399	-0.8530	0.1446	0.1038	0.1383	3.7968	2.7248	3.6302
9	3.7817	-3.4297	-0.8929	0.1988	0.1169	0.1981	5.2567	3.0902	5.2388
10	3.6174	-3.3543	-0.8850	0.2545	0.1351	0.2871	7.0343	3.7339	7.9366

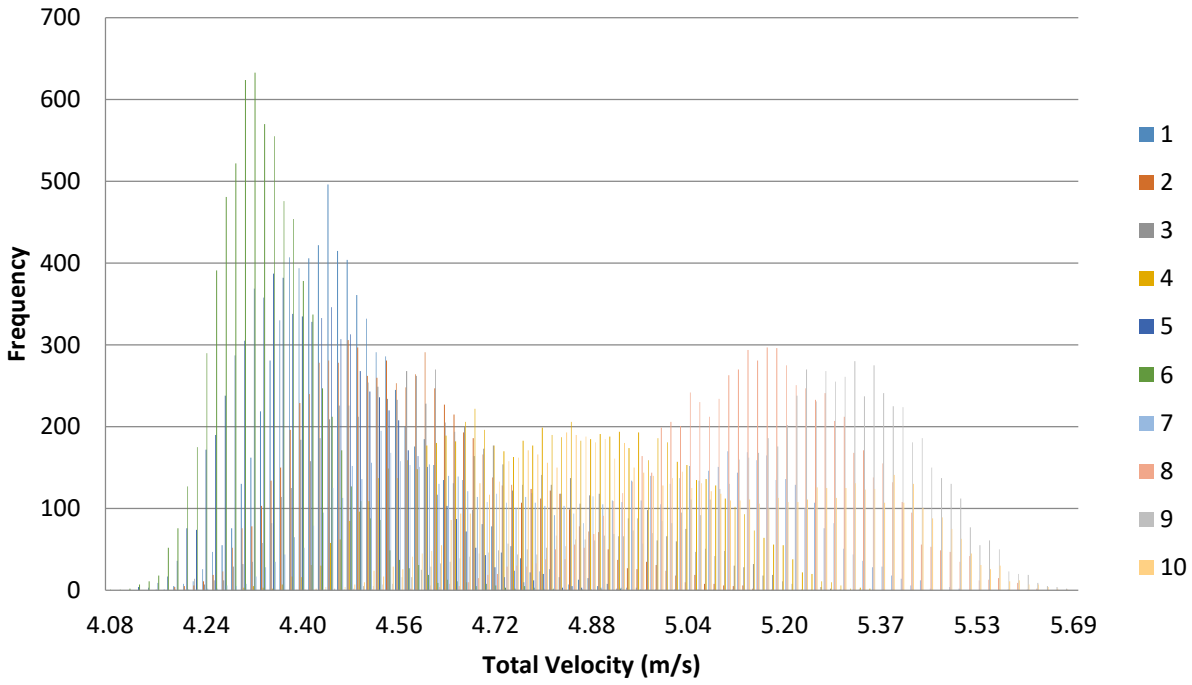


Figure 1. Velocity histogram for each interval (100 bins).

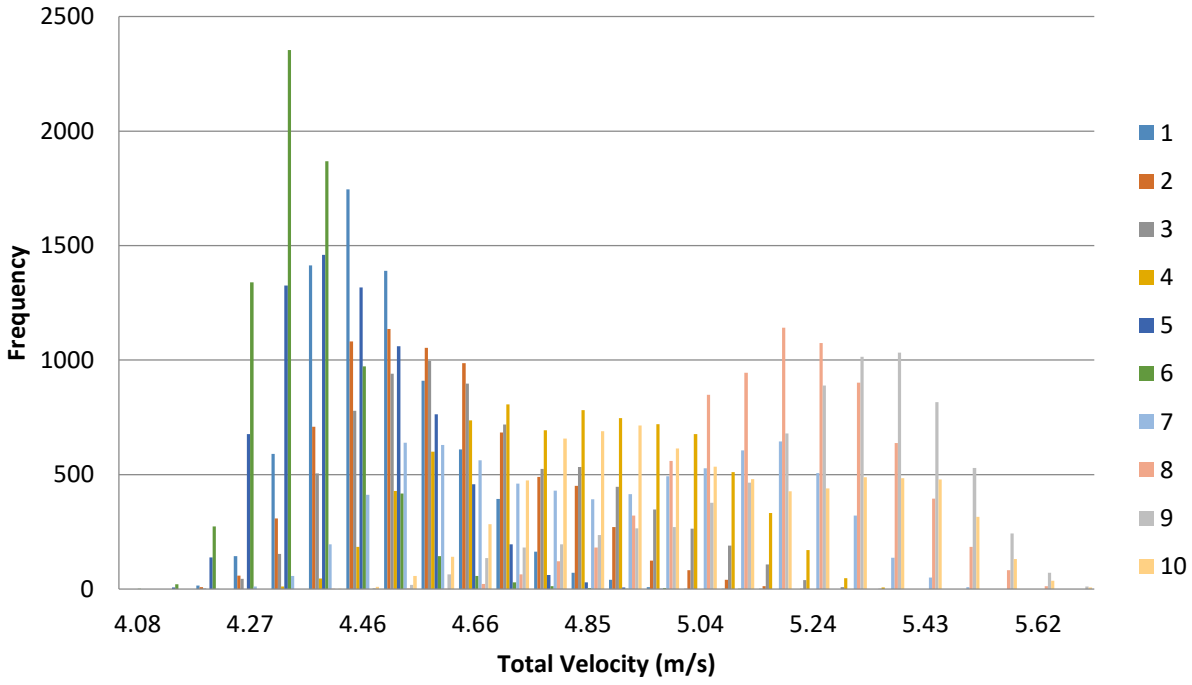
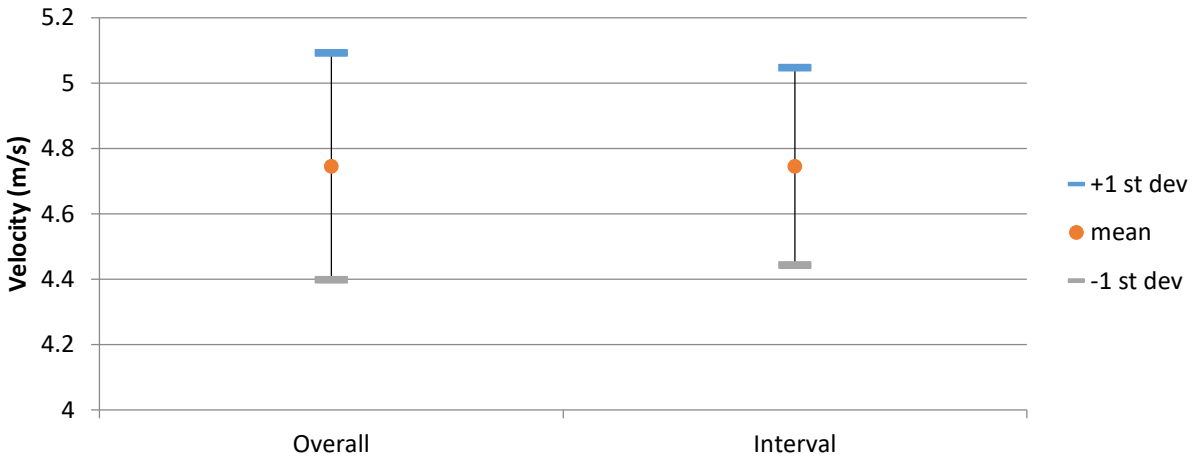
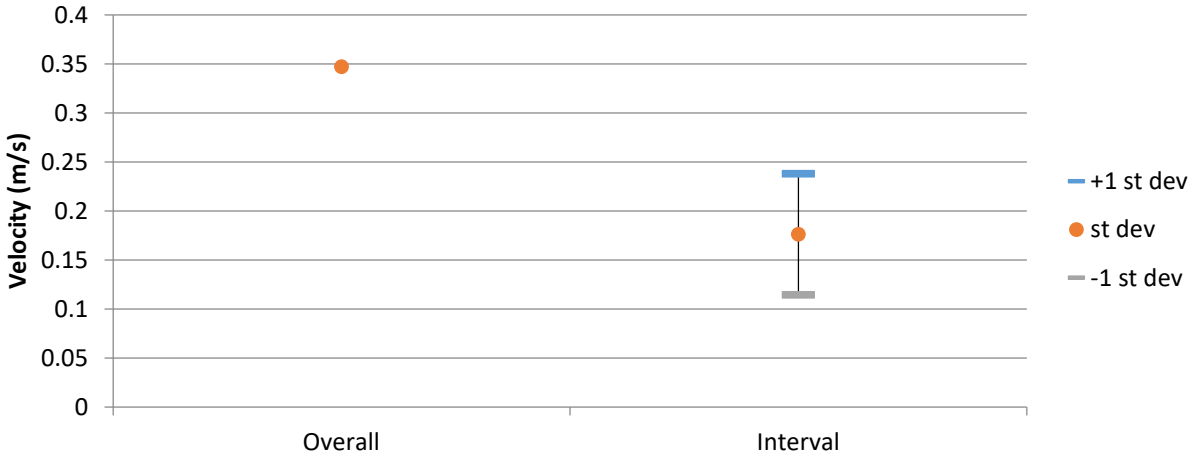


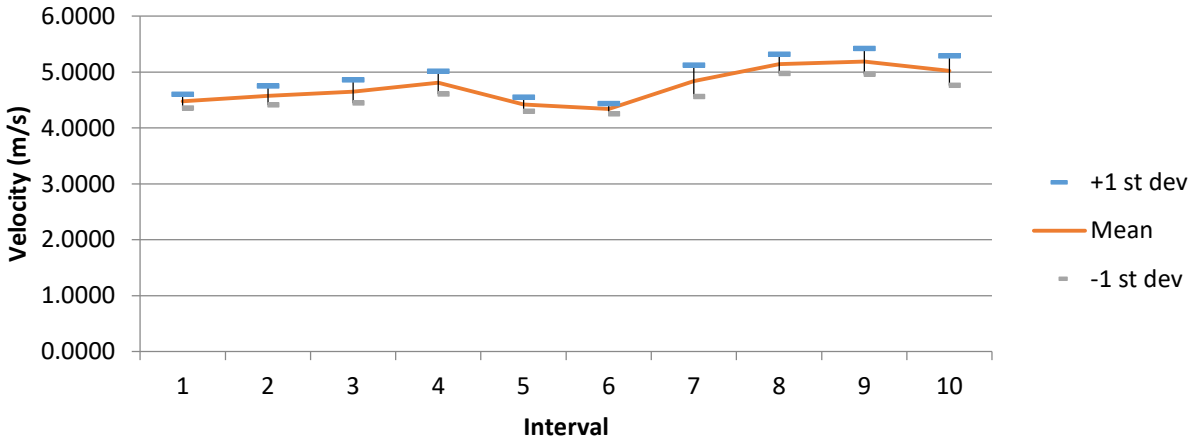
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 234
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: A4
First Sample Date: 23-Aug-13
First Sample Time: 08:58:30.500

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	7.0380	3.9912	5.0051	0.3504
u	5.4100	2.7500	3.5970	0.3429
v	-2.5400	-4.3100	-3.4095	0.2081
w	0.4690	-2.6700	-0.4985	0.4489

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	5.6785	4.0895	4.7944	0.3440	7.1746	177	1.42 %
2	6.0655	4.2946	4.9943	0.3871	7.7511	9	0.07 %
3	6.0227	3.9912	5.1422	0.2916	5.6707	1445	11.56 %
4	6.0417	4.2835	5.3691	0.2669	4.9713	363	2.90 %
5	6.0532	4.5204	5.0379	0.2695	5.3485	5	0.04 %
6	5.5367	4.4906	4.7642	0.0990	2.0788	1434	11.47 %
7	5.6997	4.5092	4.8173	0.1710	3.5490	1751	14.01 %
8	5.8427	4.5047	4.8578	0.1775	3.6537	1680	13.44 %
9	5.9729	4.4842	4.8439	0.1468	3.0316	692	5.54 %
10	7.0380	4.0039	5.3462	0.3804	7.1156	321	2.57 %
		Average	4.9967	0.2534	5.0345		
		St dev	0.2130	0.0958	1.8346		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	3.5447	-3.1616	-0.4387	0.3391	0.2042	0.4409	9.5672	5.7602	12.4393
2	3.7038	-3.2740	-0.5774	0.3566	0.2011	0.3930	9.6284	5.4285	10.6108
3	3.6224	-3.4784	-1.0061	0.2871	0.1731	0.4261	7.9249	4.7772	11.7628
4	3.9229	-3.5564	-0.8349	0.2794	0.1560	0.2499	7.1227	3.9755	6.3705
5	3.7064	-3.3602	-0.5158	0.2618	0.1664	0.2490	7.0635	4.4882	6.7179
6	3.3031	-3.4250	-0.1269	0.1081	0.1055	0.1631	3.2732	3.1951	4.9370
7	3.3321	-3.4635	-0.2048	0.1508	0.1224	0.2385	4.5248	3.6726	7.1587
8	3.3779	-3.4744	-0.1535	0.1552	0.1348	0.2866	4.5955	3.9905	8.4848
9	3.4080	-3.4314	-0.1501	0.1498	0.1362	0.1817	4.3953	3.9961	5.3312
10	3.8964	-3.5218	-0.8553	0.3697	0.2433	0.4629	9.4879	6.2445	11.8793

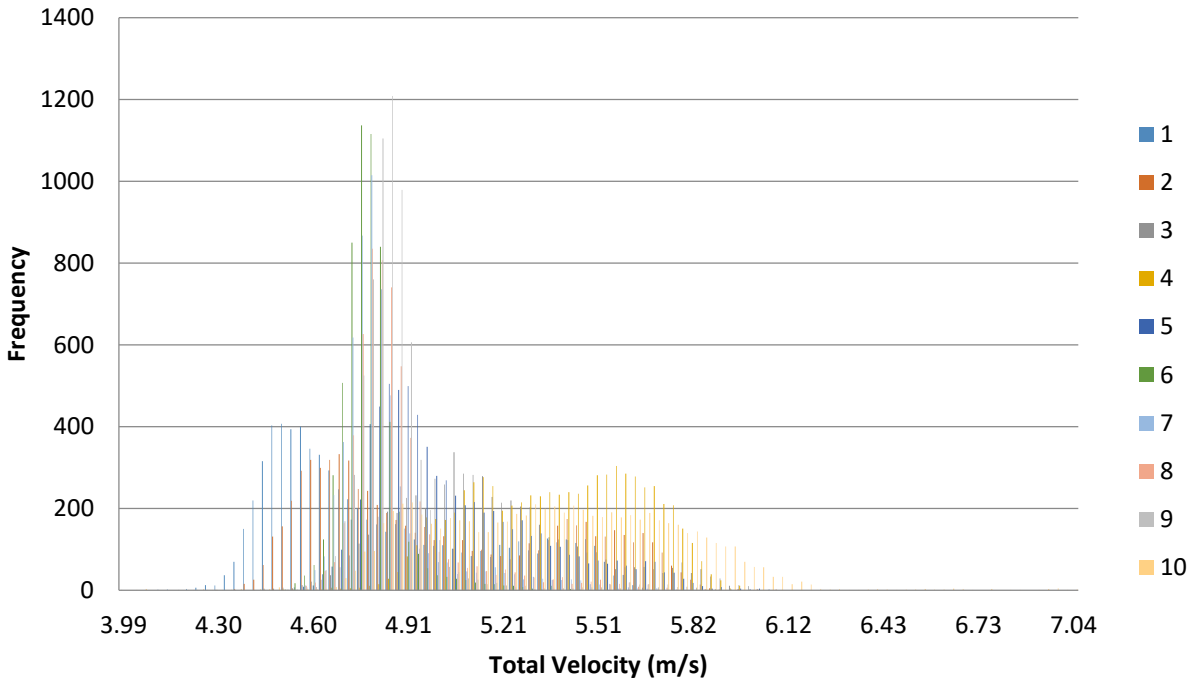


Figure 1. Velocity histogram for each interval (100 bins).

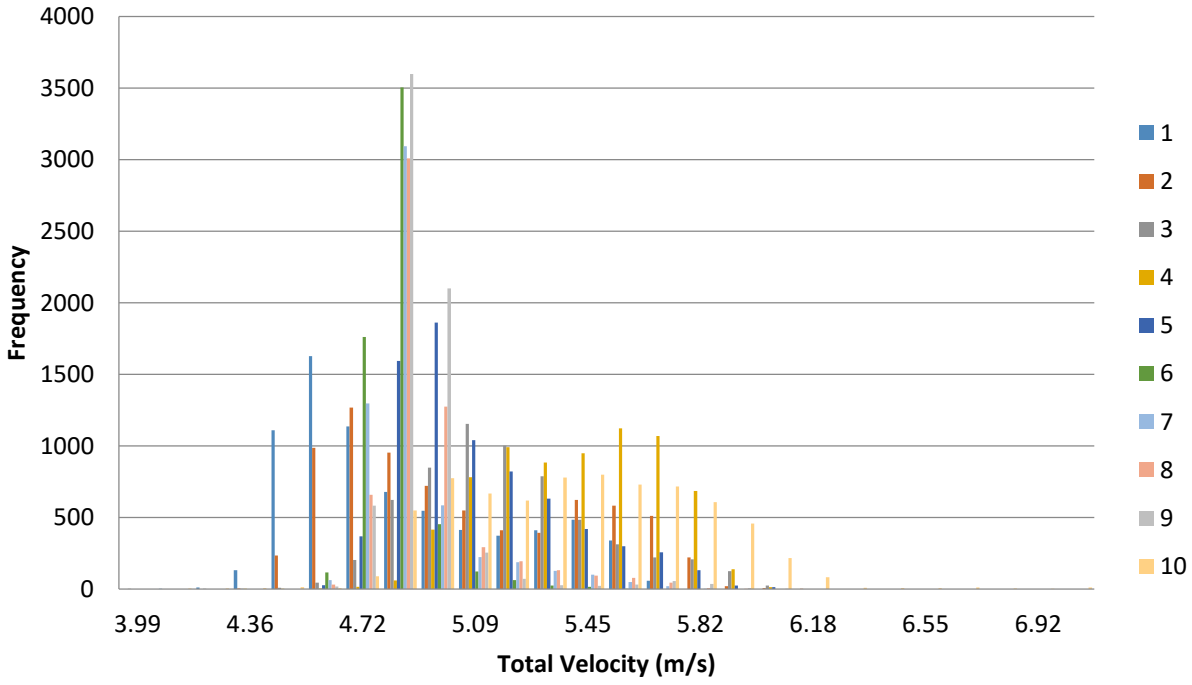
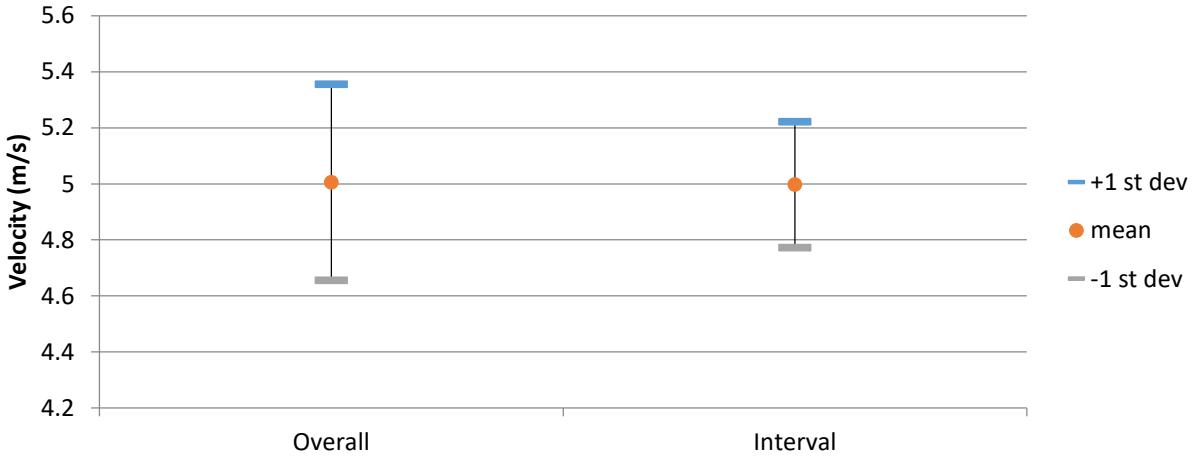
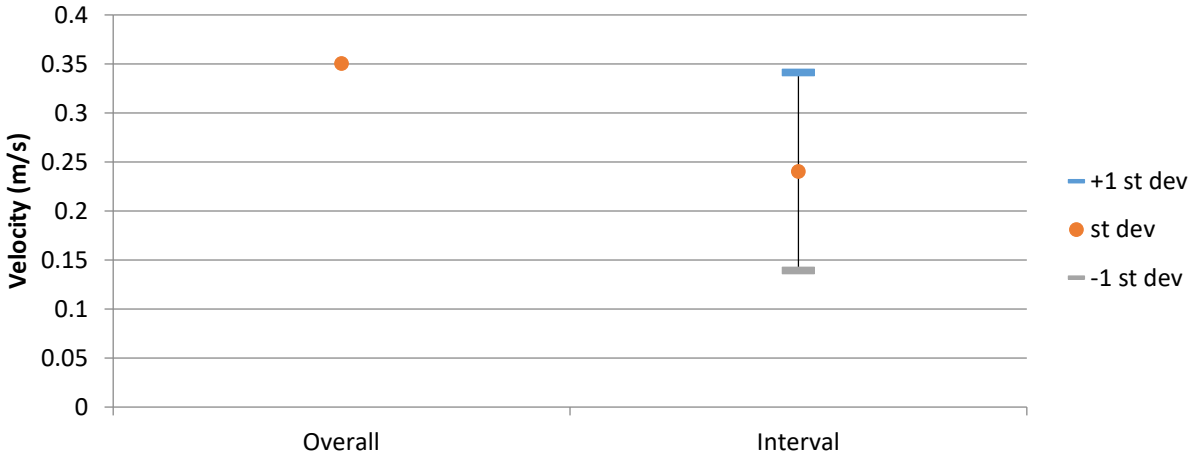


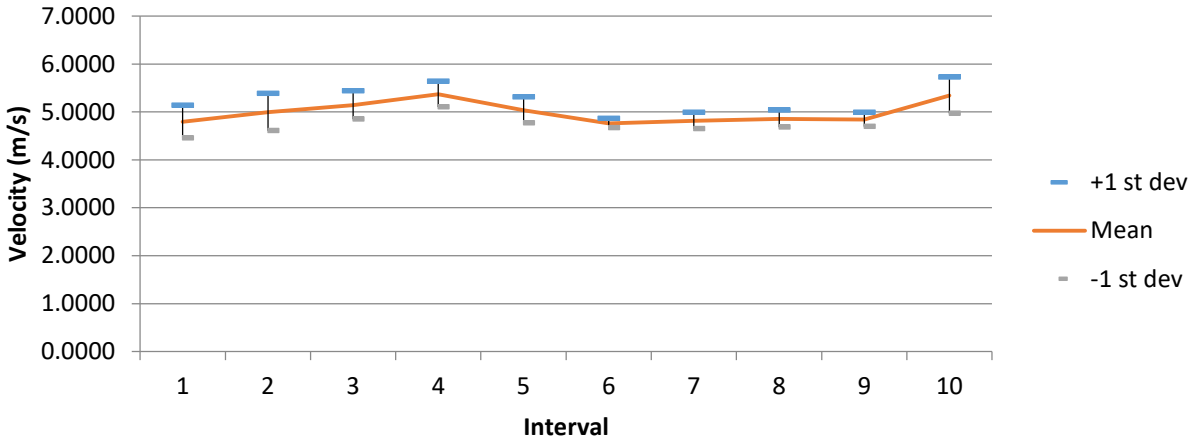
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 235
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: A5
First Sample Date: 23-Aug-13
First Sample Time: 09:00:12.484

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.1640	4.1450	4.4698	0.1458
u	3.5500	2.7900	3.0541	0.1019
v	-2.9500	-3.7500	-3.2575	0.1253
w	0.6190	-0.4290	0.1491	0.1170

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	5.1640	4.3314	4.7520	0.0589	1.2385	5559	44.47 %
2	4.8370	4.4667	4.6533	0.0513	1.1032	3613	28.90 %
3	4.7807	4.4735	4.6295	0.0417	0.9004	3996	31.97 %
4	4.7912	4.4092	4.5769	0.0419	0.9149	2401	19.21 %
5	4.7623	4.4370	4.5823	0.0408	0.8913	4795	38.36 %
6	4.7037	4.3037	4.4812	0.0544	1.2147	2482	19.86 %
7	4.6330	4.2505	4.4000	0.0504	1.1448	789	6.31 %
8	4.5455	4.2046	4.3405	0.0428	0.9851	1174	9.39 %
9	4.5130	4.1549	4.3041	0.0462	1.0743	2768	22.14 %
10	4.4481	4.1450	4.3117	0.0412	0.9555	3352	26.82 %
		Average	4.5031	0.0470	1.0423		
		St dev	0.1503	0.0061	0.1239		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	3.2112	-3.4944	0.2018	0.0540	0.0500	0.1261	1.6813	1.5564	3.9263
2	3.1503	-3.4141	0.2510	0.0528	0.0400	0.0904	1.6760	1.2699	2.8696
3	3.1485	-3.3857	0.2111	0.0534	0.0468	0.0908	1.6974	1.4875	2.8837
4	3.1189	-3.3447	0.1361	0.0557	0.0441	0.1096	1.7870	1.4125	3.5137
5	3.0934	-3.3670	0.2839	0.0447	0.0311	0.0952	1.4442	1.0051	3.0766
6	3.0567	-3.2706	0.1437	0.0599	0.0541	0.1288	1.9593	1.7696	4.2149
7	3.0500	-3.1669	0.1010	0.0832	0.0626	0.1001	2.7293	2.0535	3.2819
8	2.9824	-3.1504	0.0821	0.0688	0.0510	0.0909	2.3082	1.7108	3.0495
9	2.9452	-3.1341	0.1327	0.0675	0.0462	0.0802	2.2911	1.5682	2.7225
10	2.9423	-3.1481	0.1098	0.0548	0.0475	0.0880	1.8618	1.6129	2.9907

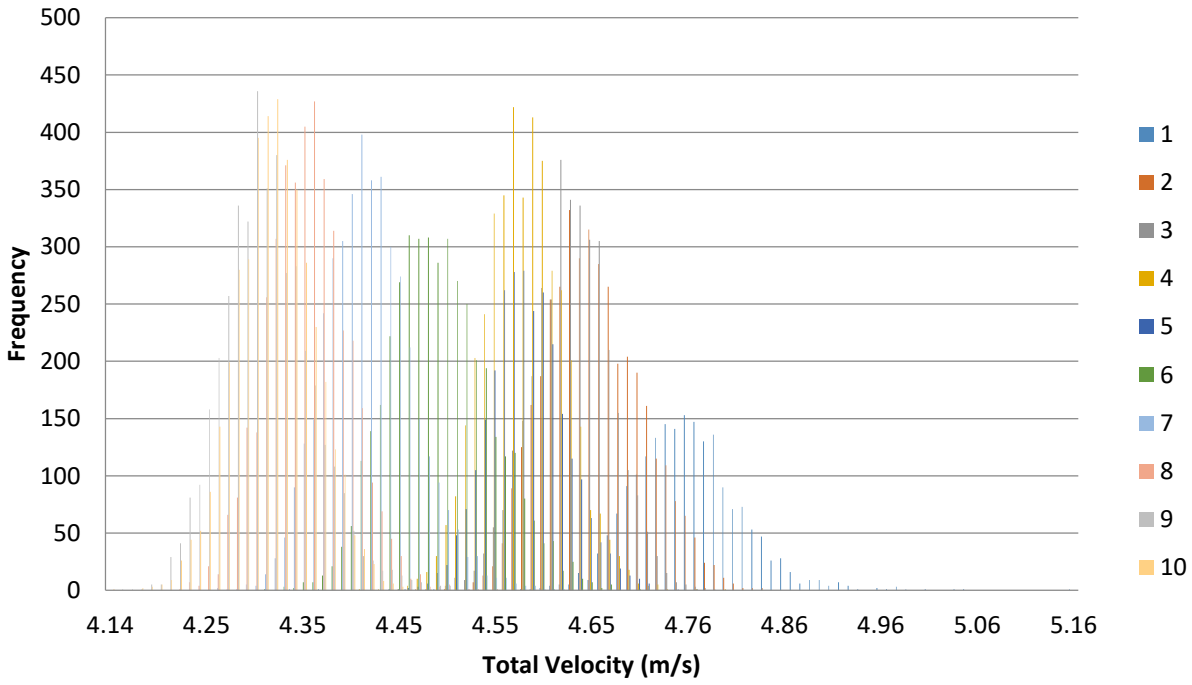


Figure 1. Velocity histogram for each interval (100 bins).

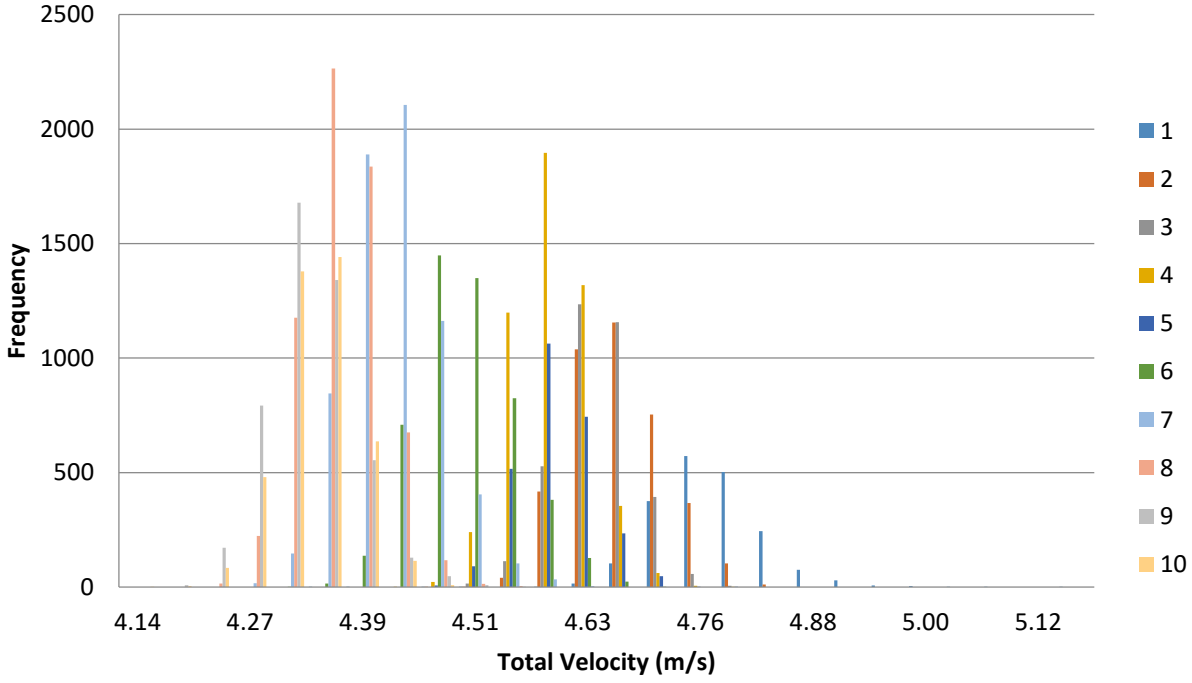
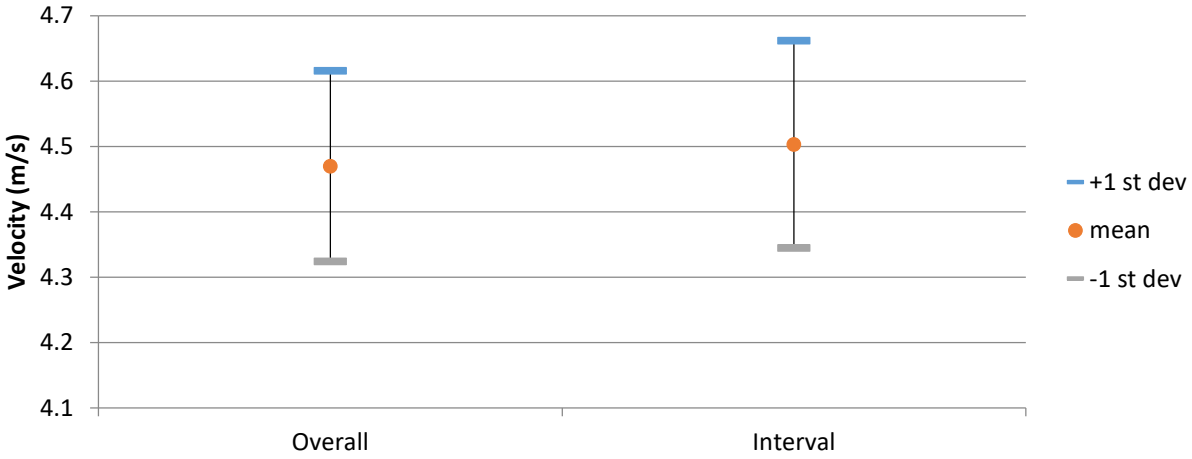
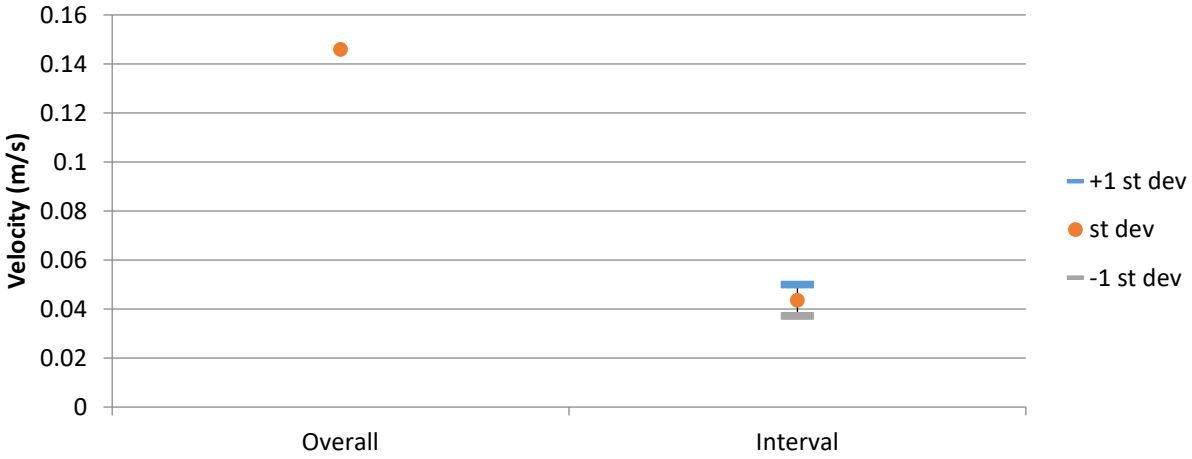


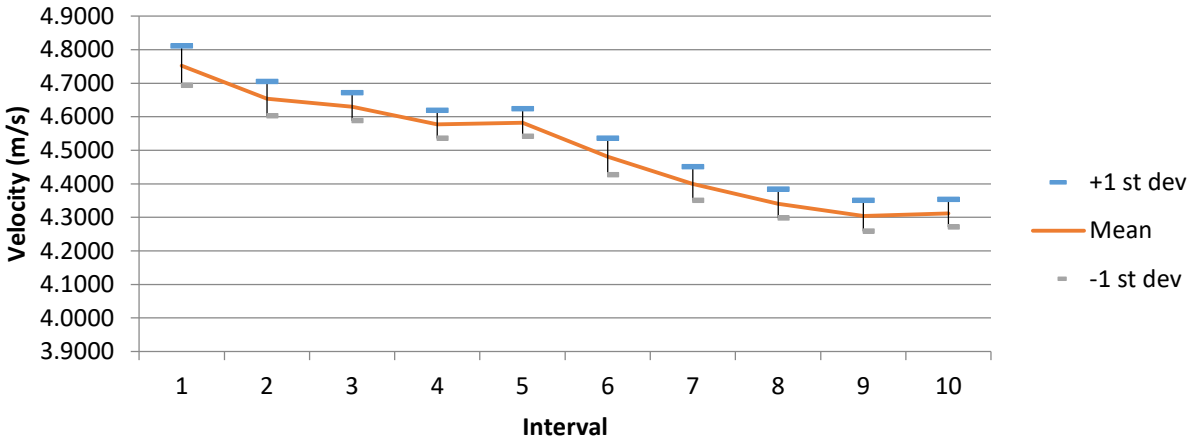
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 236
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 23-Aug-13
First Sample Time: 09:02:32.875

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.9133	5.4075	5.6711	0.0610
u	5.8500	5.2900	5.5705	0.0633
v	0.5670	-0.2760	0.1081	0.1411
w	-0.7210	-1.6100	-1.0414	0.1199

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.8363	5.4075	5.6456	0.0562	1.0602
2	5.8698	5.4446	5.6465	0.0599	0.9842
3	5.8510	5.4565	5.6439	0.0555	0.9957
4	5.8702	5.4264	5.6486	0.0562	1.0116
5	5.8656	5.4485	5.6631	0.0573	1.0047
6	5.8976	5.4587	5.6840	0.0571	0.9781
7	5.8769	5.4660	5.6834	0.0556	0.9567
8	5.9133	5.4773	5.6931	0.0545	1.0007
9	5.9040	5.4620	5.7001	0.0570	0.9895
10	5.9015	5.4933	5.7028	0.0564	0.9976
		Average	5.6711	0.0566	0.9979
		St Dev	0.0241	0.0014	0.0255

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.5668	0.0419	-0.9351	0.0573	0.0786	0.0425	1.0292	1.4114	0.7628
2	5.5630	-0.0521	-0.9627	0.0606	0.0647	0.0444	1.0900	1.1630	0.7983
3	5.5506	0.0538	-1.0164	0.0576	0.0742	0.0554	1.0370	1.3374	0.9983
4	5.5395	0.0553	-1.0993	0.0596	0.0683	0.0669	1.0764	1.2326	1.2079
5	5.5694	-0.0078	-1.0195	0.0607	0.0812	0.0784	1.0903	1.4587	1.4074
6	5.5642	0.2504	-1.1239	0.0604	0.1089	0.1013	1.0864	1.9572	1.8213
7	5.5726	0.1510	-1.0939	0.0625	0.1305	0.0994	1.1214	2.3415	1.7834
8	5.6123	0.0863	-0.9464	0.0577	0.0647	0.0754	1.0276	1.1526	1.3428
9	5.5809	0.1733	-1.1311	0.0613	0.0900	0.1610	1.0993	1.6134	2.8848
10	5.5860	0.3289	-1.0860	0.0656	0.0774	0.1550	1.1751	1.3863	2.7753

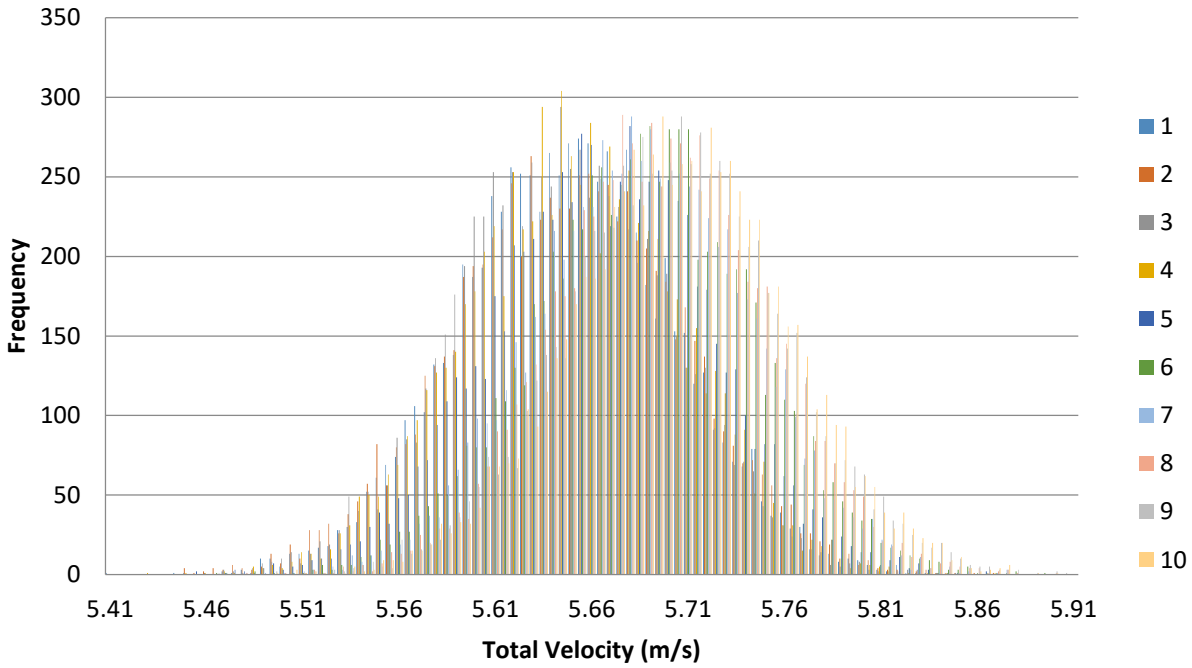


Figure 1. Velocity histogram for each interval (100 bins).

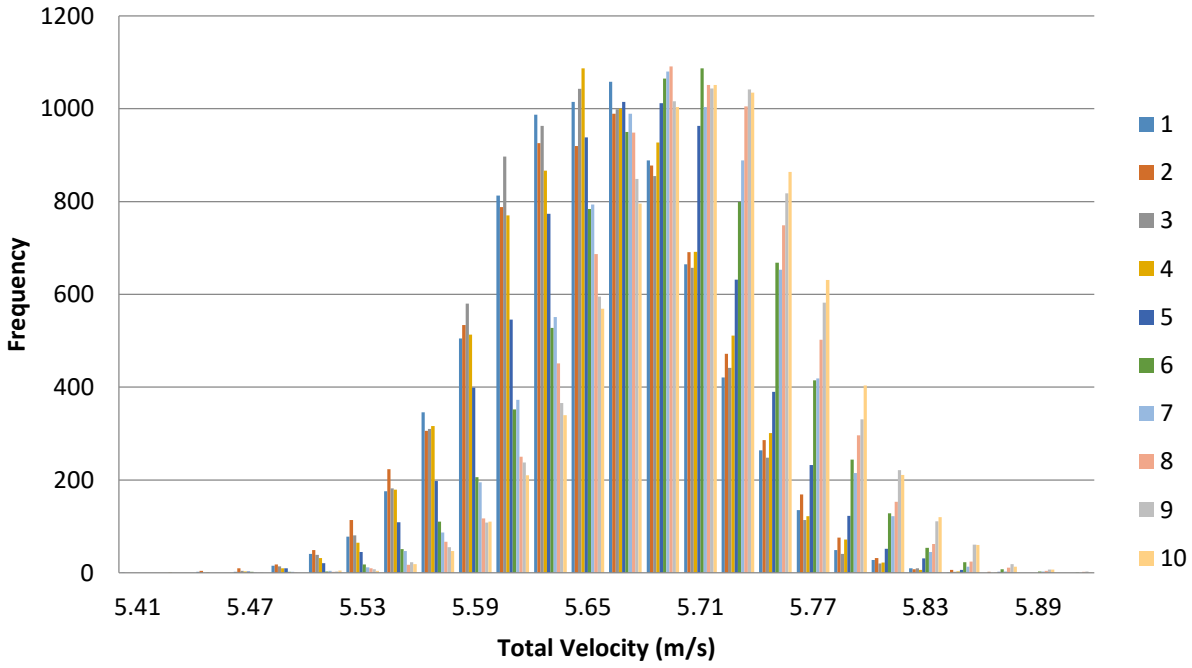
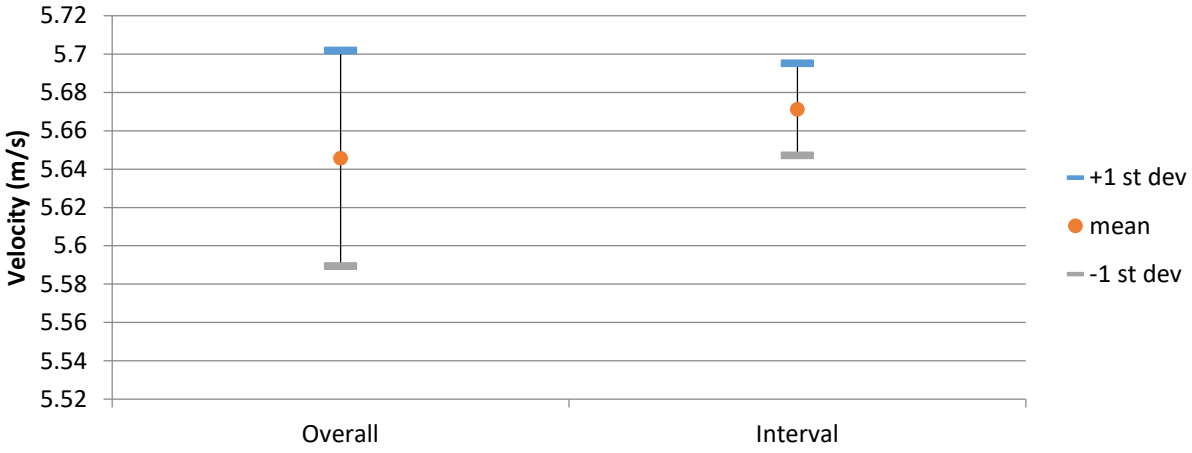
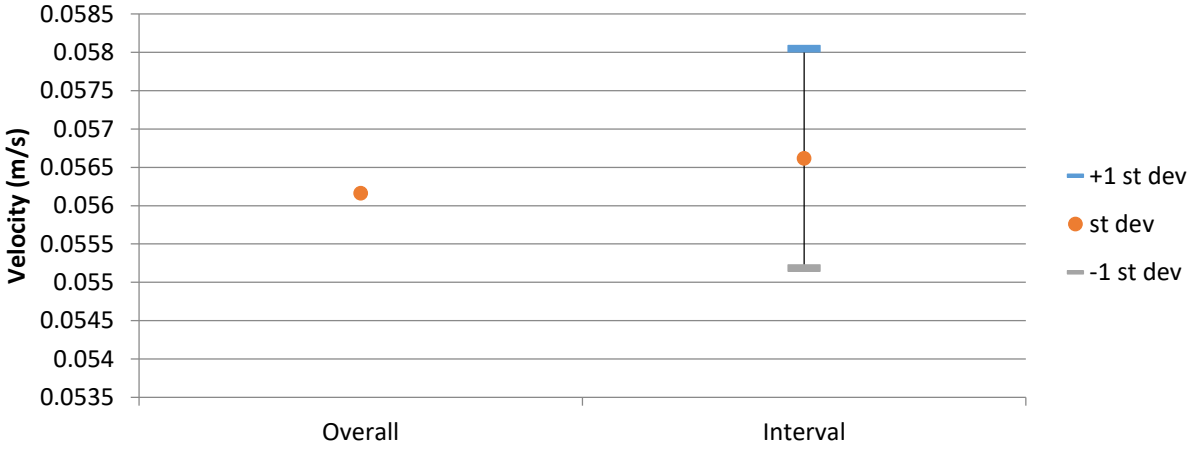


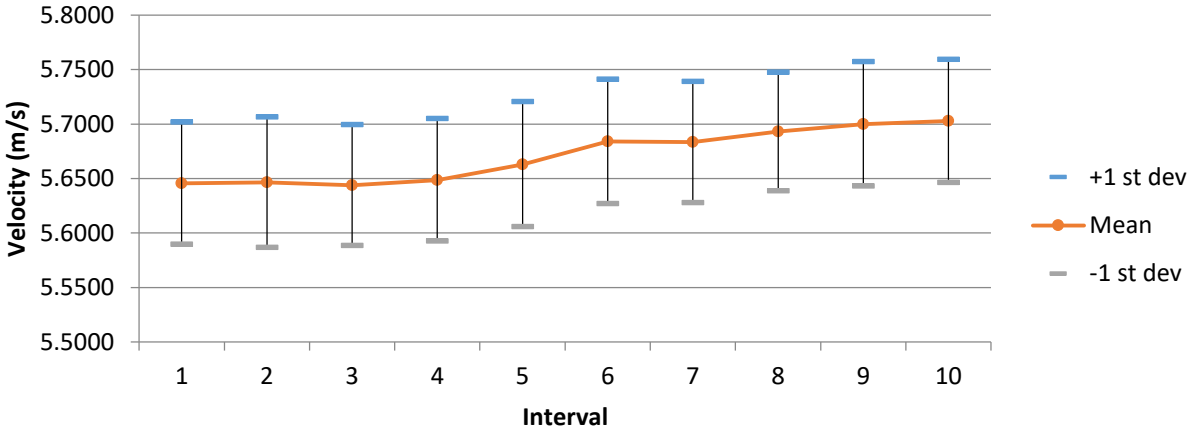
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 237
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: C3
First Sample Date: 23-Aug-13
First Sample Time: 09:05:01.812

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.5064	4.7092	5.1299	0.1040
u	4.9200	4.2900	4.6154	0.0750
v	-1.6000	-2.3500	-2.0341	0.1113
w	-0.4300	-1.3900	-0.9108	0.1986

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.4624	4.8253	5.1238	0.0842	1.5353
2	5.4676	4.8437	5.1646	0.0793	1.4697
3	5.4539	4.8828	5.1885	0.0763	1.4340
4	5.4478	4.9230	5.1856	0.0744	1.4177
5	5.4776	4.9147	5.1823	0.0735	1.5685
6	5.5064	4.9159	5.2065	0.0817	1.9808
7	5.5015	4.7762	5.0867	0.1008	1.5501
8	5.4044	4.8188	5.1035	0.0791	1.6224
9	5.3396	4.7713	5.0537	0.0820	1.7285
10	5.3461	4.7092	5.0037	0.0865	1.5937
		Average	5.1299	0.0818	1.5901
		St Dev	0.0672	0.0079	0.1570

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	4.5954	-2.0977	-0.8520	0.0727	0.0643	0.0865	1.5824	1.3996	1.8818
2	4.6197	-2.0675	-1.0219	0.0695	0.1023	0.0586	1.5054	2.2137	1.2679
3	4.6268	-2.1052	-1.0361	0.0699	0.0768	0.0491	1.5107	1.6600	1.0613
4	4.6165	-2.1177	-1.0419	0.0697	0.0545	0.0742	1.5108	1.1800	1.6068
5	4.6018	-2.0903	-1.1416	0.0692	0.0609	0.0612	1.5029	1.3238	1.3301
6	4.6502	-2.0428	-1.1380	0.0780	0.0868	0.0946	1.6784	1.8662	2.0341
7	4.6275	-1.9802	-0.7194	0.0736	0.0913	0.1336	1.5912	1.9721	2.8881
8	4.6172	-2.0095	-0.8196	0.0778	0.0893	0.0963	1.6852	1.9340	2.0861
9	4.5924	-1.9866	-0.6998	0.0730	0.0616	0.1062	1.5888	1.3415	2.3131
10	4.6064	-1.8437	-0.6382	0.0776	0.0815	0.0844	1.6851	1.7701	1.8316

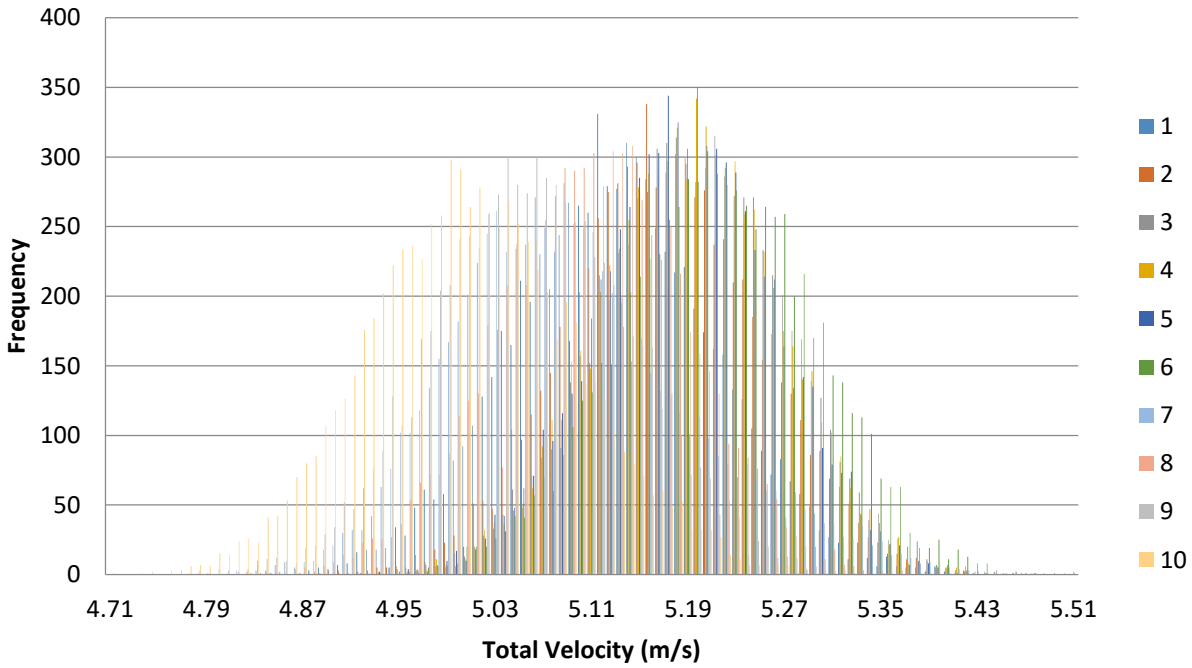


Figure 1. Velocity histogram for each interval (100 bins).

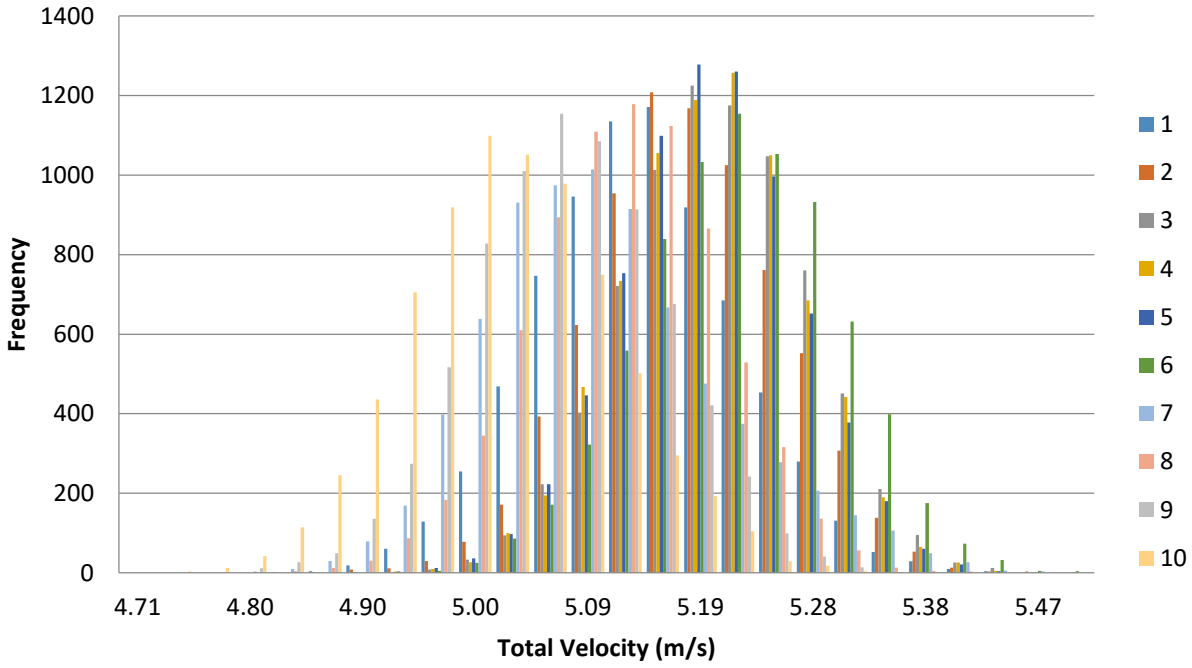
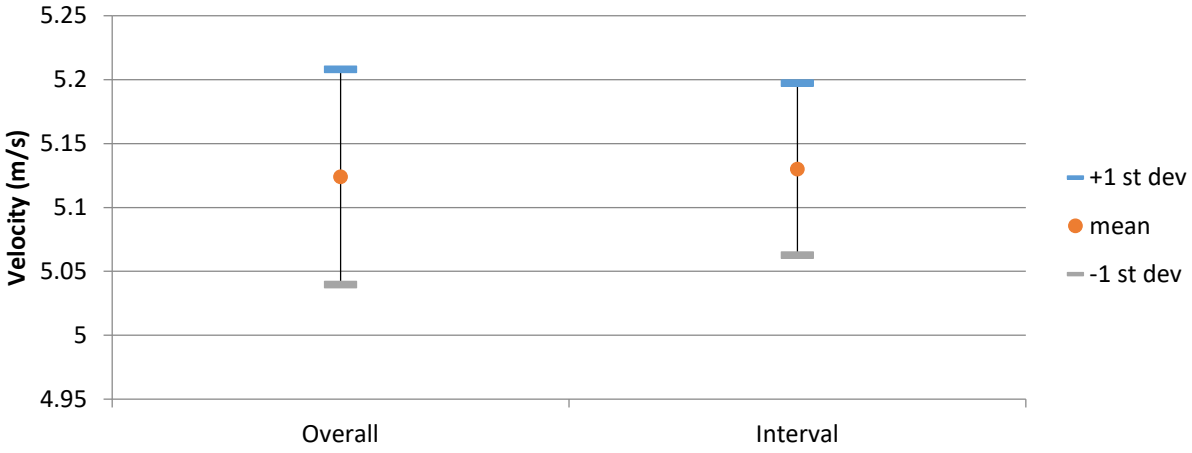
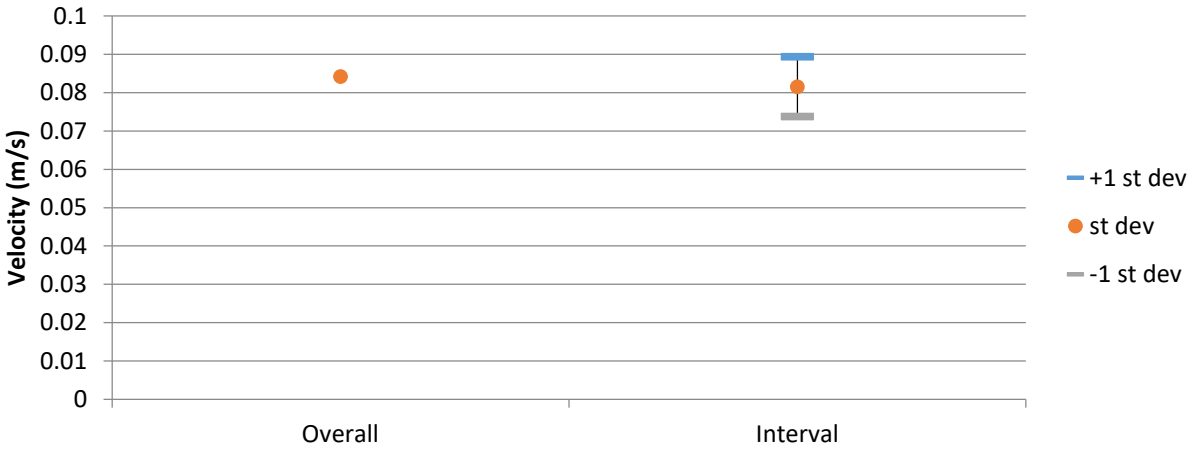


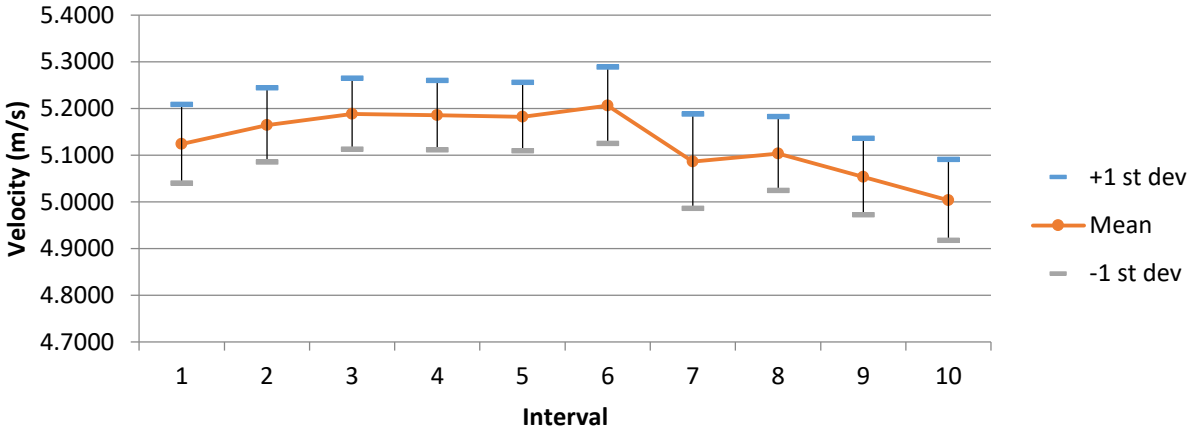
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 238
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: C4
First Sample Date: 23-Aug-13
First Sample Time: 09:06:35.812

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.3968	3.8776	4.7183	0.1905
u	5.0800	3.5900	4.4029	0.1877
v	-1.3000	-1.9700	-1.6784	0.0830
w	0.1330	-0.5400	-0.2151	0.0850

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.3864	4.0601	4.7446	0.1999	3.8802
2	5.3321	4.1005	4.7391	0.1839	3.7029
3	5.2614	4.1033	4.7243	0.1749	4.0056
4	5.2820	4.0941	4.7165	0.1889	3.9293
5	5.2696	3.9726	4.7058	0.1849	4.1269
6	5.3569	3.9760	4.6956	0.1938	4.0816
7	5.2859	4.1158	4.7252	0.1929	4.1373
8	5.3968	3.8776	4.7144	0.1950	3.9438
9	5.3499	3.9821	4.7099	0.1857	4.2105
10	5.2993	4.0228	4.7074	0.1982	4.0231
		Average	4.7183	0.1898	4.0041
		St Dev	0.0153	0.0076	0.1404

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	4.4363	-1.6751	-0.1160	0.1961	0.0757	0.0859	4.4215	1.7065	1.9357
2	4.4143	-1.7180	-0.1335	0.1805	0.0607	0.0424	4.0889	1.3740	0.9601
3	4.3886	-1.7262	-0.2745	0.1726	0.0609	0.0387	3.9328	1.3877	0.8825
4	4.3715	-1.7412	-0.3141	0.1866	0.0675	0.0380	4.2677	1.5432	0.8685
5	4.4065	-1.6332	-0.2094	0.1829	0.1009	0.0781	4.1516	2.2909	1.7733
6	4.3960	-1.6312	-0.2382	0.1894	0.0719	0.0495	4.3092	1.6351	1.1271
7	4.4241	-1.6408	-0.2351	0.1891	0.0720	0.0578	4.2745	1.6275	1.3071
8	4.3957	-1.6925	-0.1694	0.1919	0.0756	0.0752	4.3659	1.7207	1.7101
9	4.4066	-1.6485	-0.1960	0.1831	0.0781	0.0643	4.1550	1.7714	1.4586
10	4.3899	-1.6770	-0.2651	0.1953	0.0659	0.0516	4.4495	1.5002	1.1745

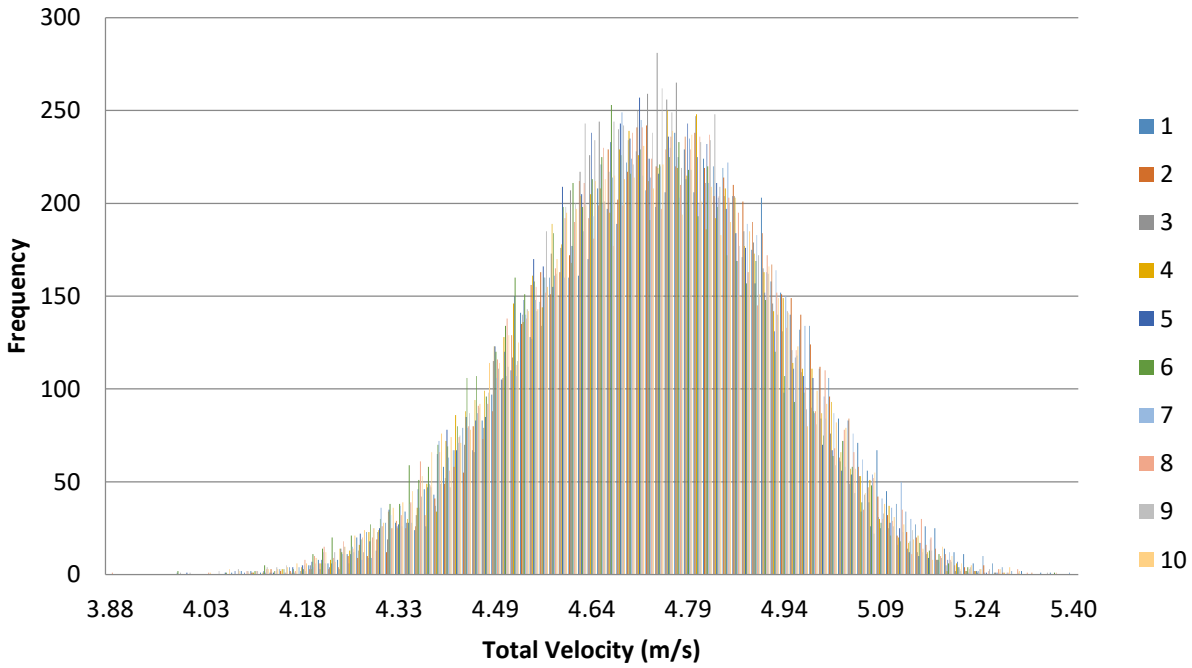


Figure 1. Velocity histogram for each interval (100 bins).

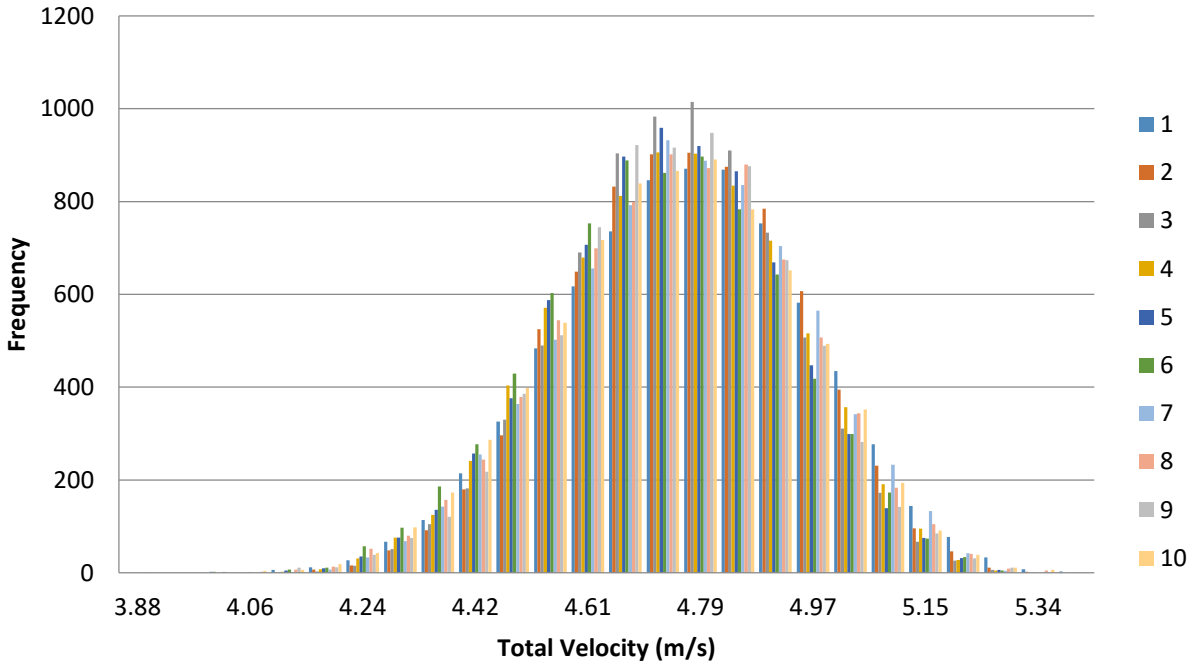
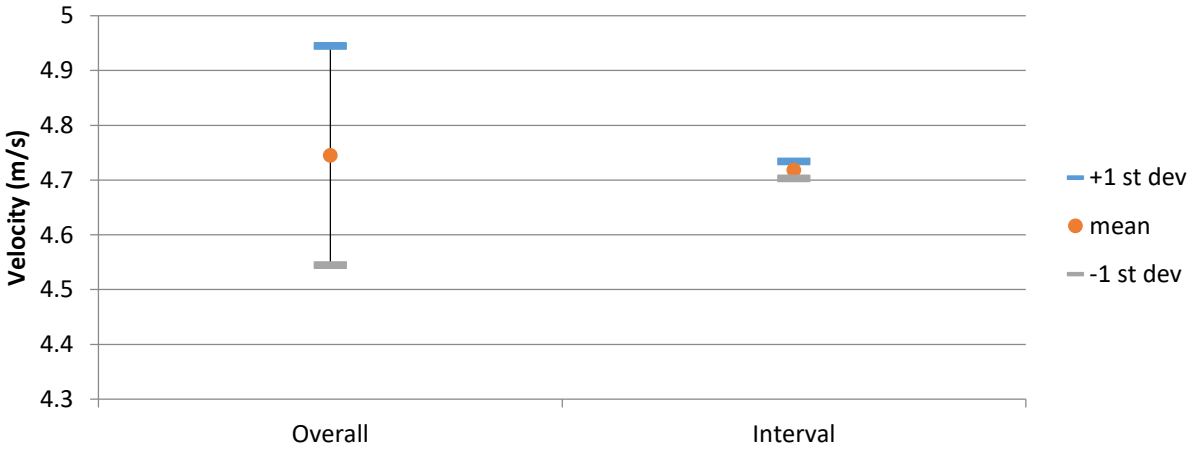
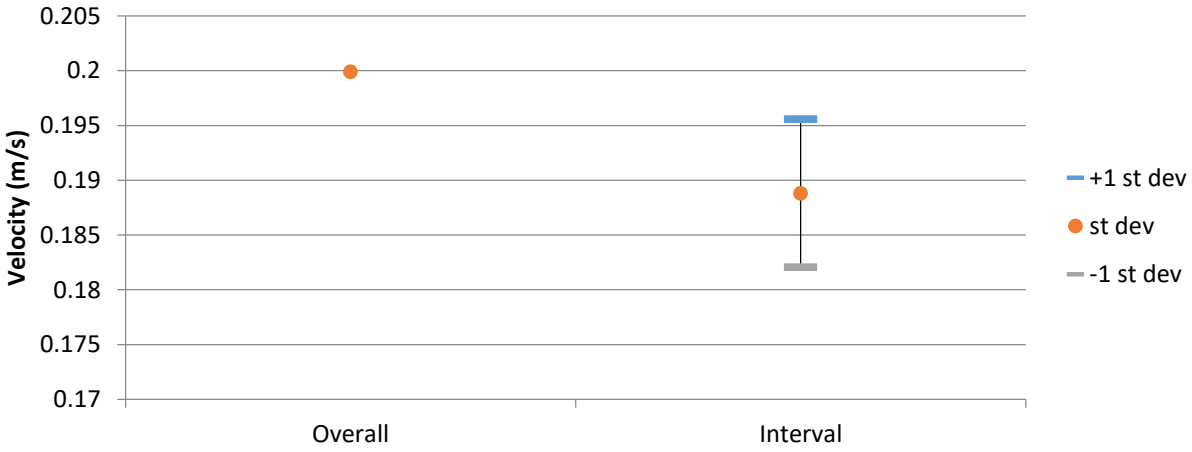


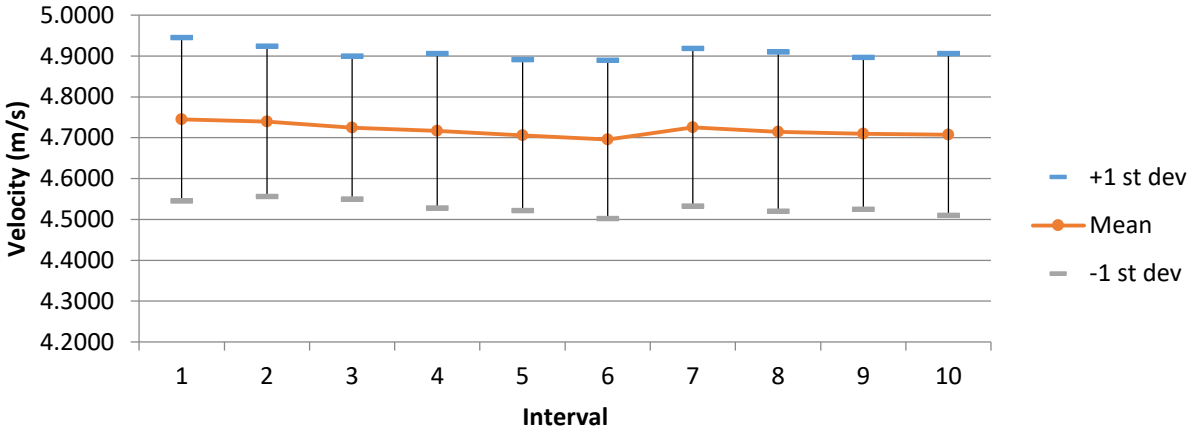
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 239
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: C5
First Sample Date: 23-Aug-13
First Sample Time: 09:08:55.734

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.0762	4.4448	4.7775	0.0734
u	4.5600	3.6400	4.1334	0.1127
v	-1.9300	-2.8200	-2.3867	0.1587
w	0.2990	-0.3440	-0.0435	0.0895

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.0467	4.4986	4.7627	0.0719	1.4675
2	5.0166	4.5327	4.7656	0.0699	1.5036
3	5.0196	4.4889	4.7775	0.0718	1.5017
4	5.0668	4.5301	4.7933	0.0720	1.5215
5	5.0439	4.4990	4.7917	0.0729	1.5202
6	5.0168	4.5240	4.7828	0.0727	1.4959
7	5.0391	4.5189	4.7736	0.0714	1.5516
8	5.0762	4.4968	4.7823	0.0742	1.5823
9	5.0450	4.5137	4.7813	0.0757	1.5609
10	5.0279	4.4448	4.7637	0.0744	1.5215
		Average	4.7775	0.0727	1.5227
		St Dev	0.0110	0.0017	0.0323

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	4.1425	-2.3467	-0.1096	0.0787	0.0379	0.0366	1.8994	0.9153	0.8842
2	4.1189	-2.3935	-0.1127	0.0761	0.0346	0.0414	1.8472	0.8401	1.0054
3	4.0696	-2.4957	-0.1193	0.0868	0.0782	0.1086	2.1333	1.9206	2.6690
4	3.9874	-2.6579	-0.0233	0.0942	0.0679	0.0580	2.3627	1.7037	1.4543
5	4.0670	-2.5315	-0.0093	0.0882	0.0582	0.0728	2.1697	1.4315	1.7894
6	4.1397	-2.3927	-0.0767	0.0805	0.0563	0.0514	1.9448	1.3611	1.2420
7	4.1788	-2.3037	-0.0037	0.0890	0.1015	0.0712	2.1293	2.4287	1.7034
8	4.1853	-2.3099	-0.0463	0.0880	0.1002	0.0580	2.1035	2.3938	1.3863
9	4.1840	-2.3086	0.0046	0.0919	0.1178	0.0917	2.1955	2.8143	2.1925
10	4.2610	-2.1269	0.0613	0.0810	0.0586	0.0676	1.9018	1.3752	1.5866

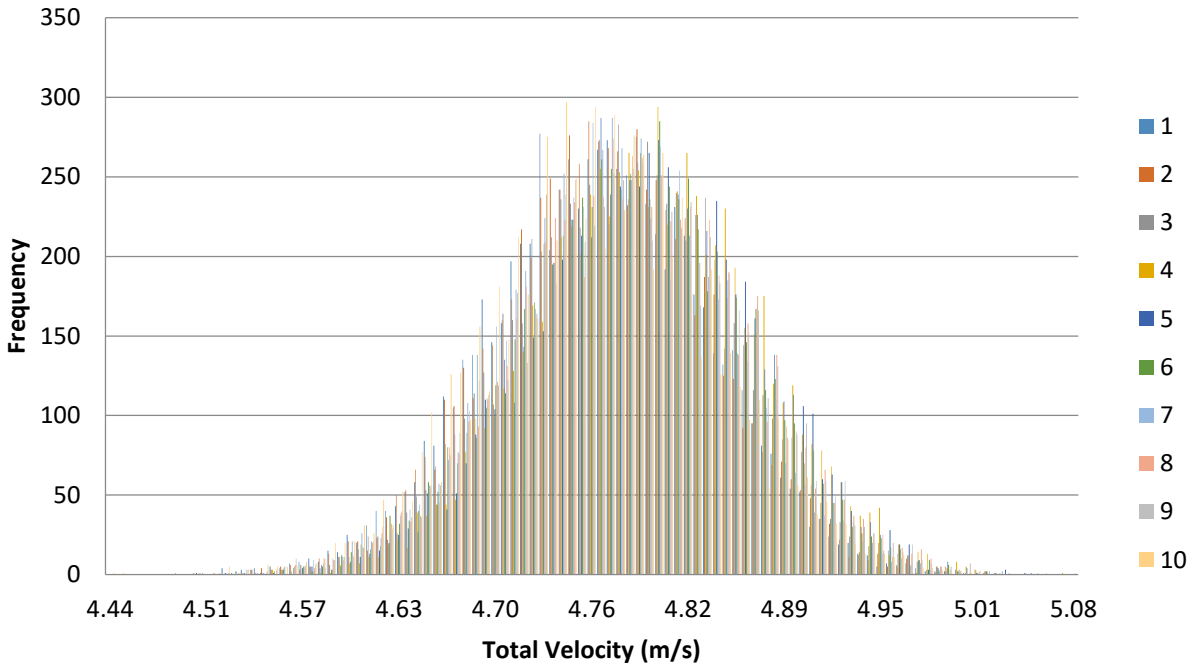


Figure 1. Velocity histogram for each interval (100 bins).

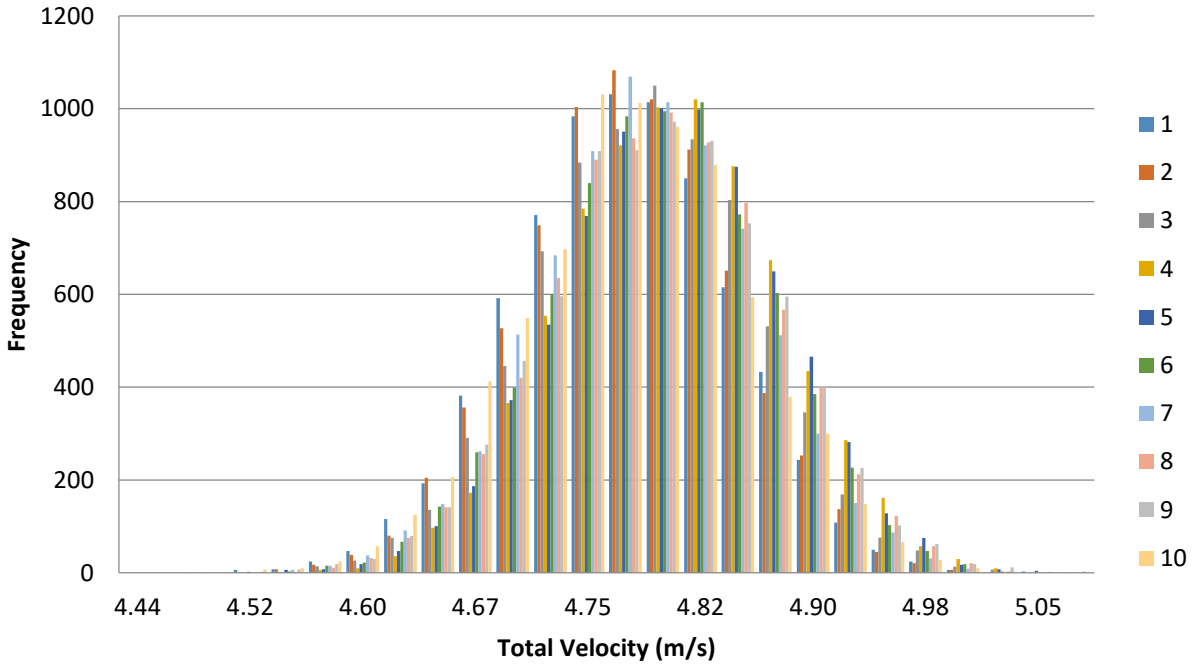
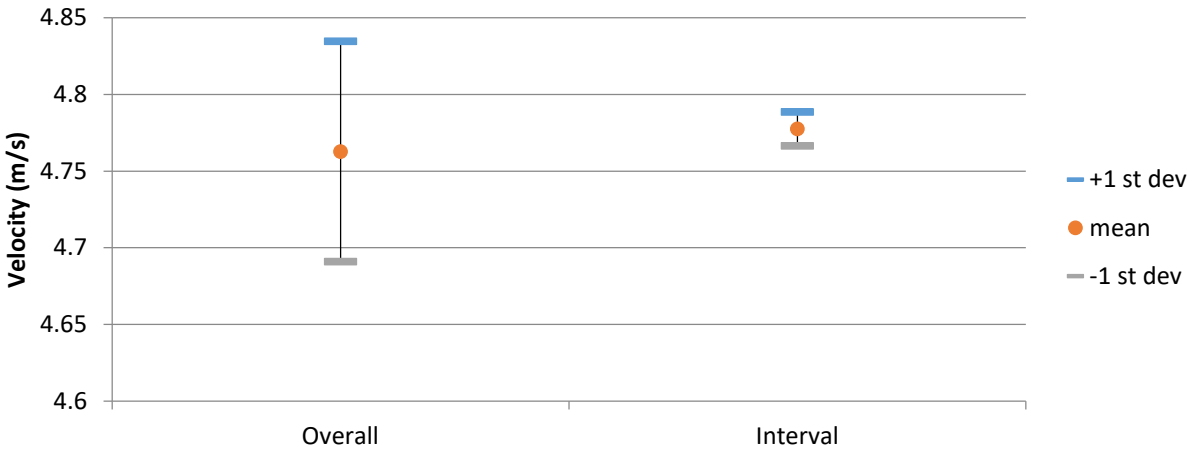
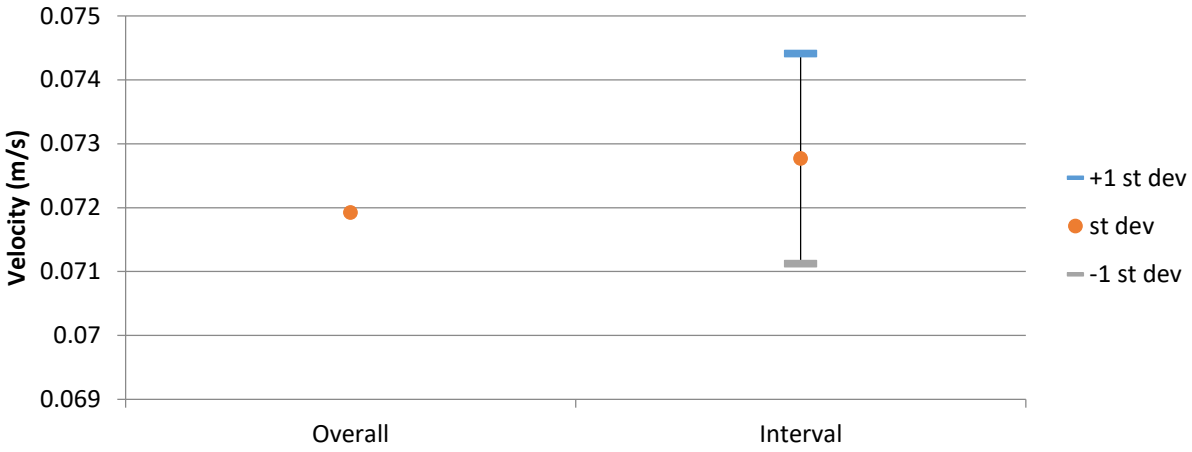


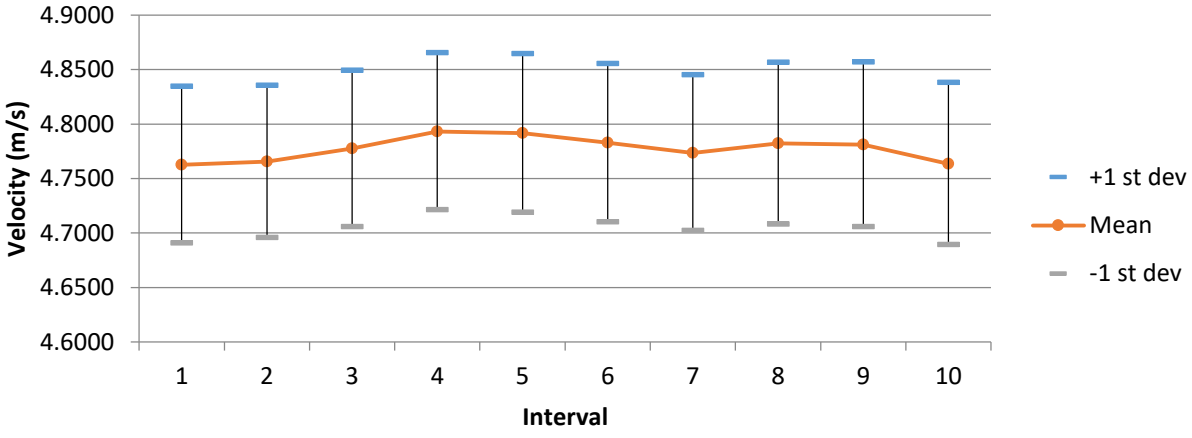
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 240
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: C2
First Sample Date: 23-Aug-13
First Sample Time: 09:11:24.156

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.9024	4.9651	5.4474	0.1201
u	5.3800	4.0600	4.7609	0.1689
v	-1.1300	-2.5900	-1.8557	0.2349
w	-1.4300	-2.5100	-1.8634	0.1503

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.8766	4.9822	5.4280	0.1311	1.8855
2	5.7971	4.9877	5.3680	0.1012	1.7376
3	5.8364	5.0025	5.4589	0.0949	1.9539
4	5.8635	5.0999	5.4845	0.1072	1.7529
5	5.8984	5.1678	5.5137	0.0966	2.0737
6	5.9024	5.1101	5.4873	0.1138	2.0029
7	5.8503	5.0737	5.4743	0.1096	2.2977
8	5.8194	4.9871	5.3934	0.1239	2.0567
9	5.7808	4.9651	5.4181	0.1114	2.2860
10	5.8201	5.0010	5.4474	0.1245	2.0456
		Average	5.4474	0.1114	2.0092
		St Dev	0.0456	0.0122	0.1804

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	4.8341	-1.6198	-1.8553	0.1733	0.0928	0.0866	3.5849	1.9195	1.7922
2	4.6564	-1.8583	-1.9102	0.1225	0.1107	0.1191	2.6313	2.3767	2.5570
3	4.6137	-2.0910	-2.0261	0.1171	0.1339	0.1141	2.5381	2.9014	2.4733
4	4.6161	-2.1093	-2.0680	0.1187	0.1665	0.1252	2.5704	3.6063	2.7117
5	4.7789	-2.0498	-1.8258	0.1243	0.1177	0.0888	2.6004	2.4620	1.8573
6	4.8463	-1.9118	-1.7150	0.1316	0.1136	0.1014	2.7157	2.3432	2.0924
7	4.9008	-1.7252	-1.7193	0.1336	0.0876	0.0699	2.7266	1.7869	1.4265
8	4.8204	-1.5253	-1.8653	0.1760	0.1340	0.1129	3.6520	2.7794	2.3430
9	4.8002	-1.7027	-1.8336	0.1417	0.1801	0.1122	2.9513	3.7520	2.3365
10	4.7419	-1.9639	-1.8154	0.1390	0.1521	0.0960	2.9316	3.2067	2.0238

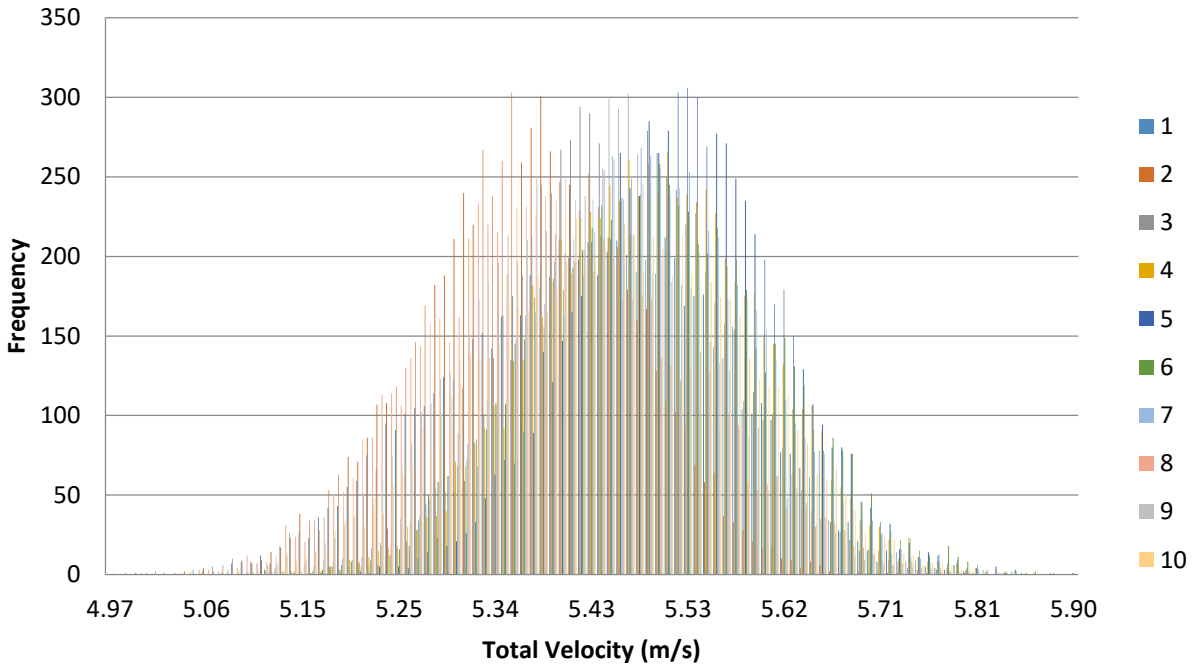


Figure 1. Velocity histogram for each interval (100 bins).

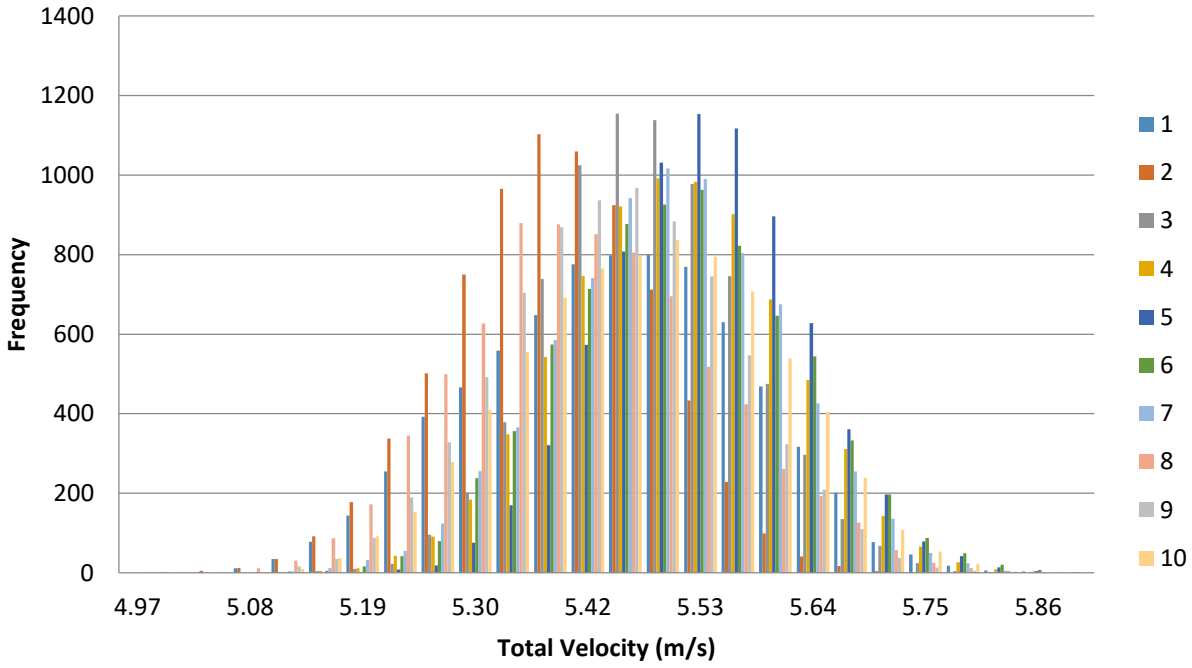
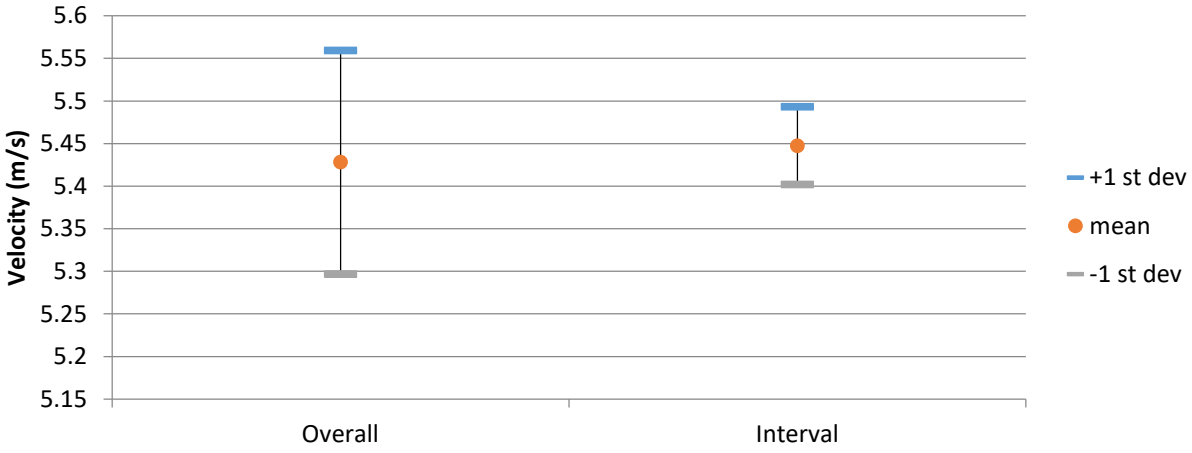
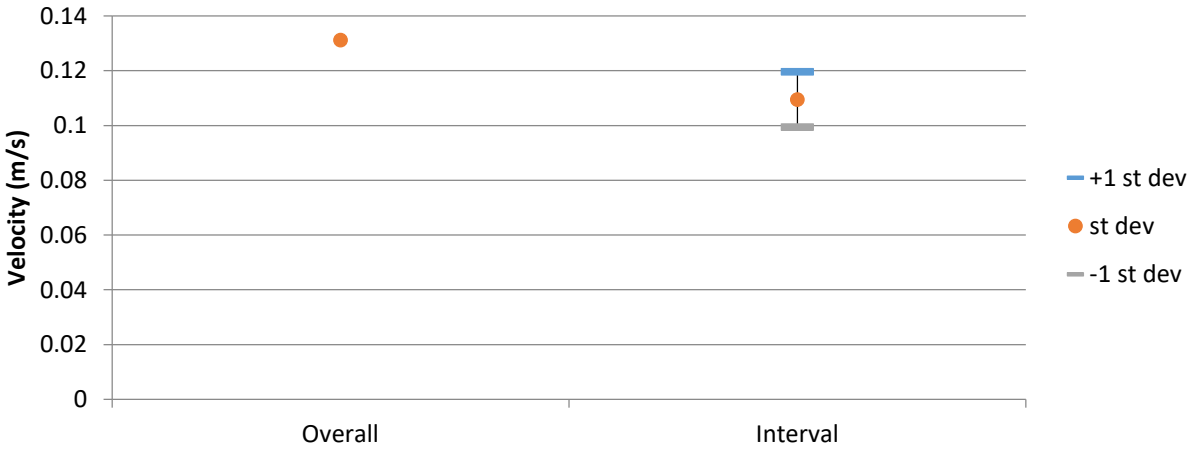


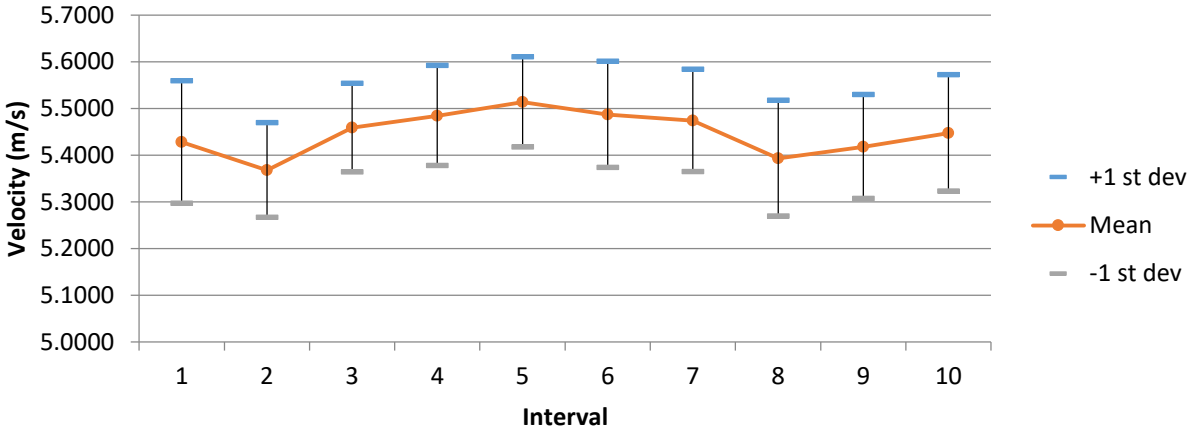
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 241
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: G2
First Sample Date: 23-Aug-13
First Sample Time: 09:14:11.625

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	7.2741	5.1592	5.9125	0.2985
u	5.3400	3.6100	4.8277	0.2778
v	5.0100	1.4500	2.8981	0.6742
w	-0.7510	-2.8400	-1.6367	0.3609

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	6.5518	5.2602	5.6821	0.1802	3.1714	0	0.00 %
2	6.2599	5.1982	5.5871	0.1445	2.5861	0	0.00 %
3	6.3632	5.4142	5.6799	0.1320	2.3247	0	0.00 %
4	6.8367	5.5491	6.0068	0.2131	3.5471	0	0.00 %
5	6.6974	5.5723	5.9354	0.1628	2.7432	0	0.00 %
6	6.7760	5.4100	5.8330	0.1611	2.7614	0	0.00 %
7	6.8420	5.4253	5.8625	0.1777	3.0315	0	0.00 %
8	7.2741	5.3664	6.2041	0.2645	4.2639	18	0.14 %
9	7.0790	5.3012	6.2601	0.2718	4.3415	474	3.79 %
10	7.0977	5.1592	6.1706	0.2471	4.0040	2152	17.22 %
		Average	5.9221	0.1955	3.2775		
		St dev	0.2242	0.0479	0.6867		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	4.8196	2.4493	-1.7117	0.1161	0.3467	0.1662	2.4093	7.1930	3.4493
2	4.9107	2.1419	-1.5387	0.1296	0.3122	0.2275	2.6401	6.3575	4.6337
3	4.9965	2.4066	-1.1803	0.0651	0.3070	0.1763	1.3021	6.1438	3.5295
4	5.0444	2.9520	-1.3334	0.0597	0.3928	0.1734	1.1826	7.7859	3.4375
5	5.0060	2.8121	-1.4653	0.0695	0.3132	0.1937	1.3888	6.2563	3.8684
6	4.9395	2.5812	-1.6928	0.0951	0.3071	0.1402	1.9251	6.2171	2.8388
7	4.8841	2.7102	-1.7468	0.0819	0.3293	0.1837	1.6763	6.7427	3.7604
8	4.8362	3.5157	-1.5599	0.1952	0.4800	0.3320	4.0359	9.9260	6.8641
9	4.4718	3.7908	-2.1413	0.2470	0.4194	0.2716	5.5244	9.3793	6.0731
10	4.1521	3.9935	-2.1856	0.1515	0.3351	0.1924	3.6484	8.0716	4.6333

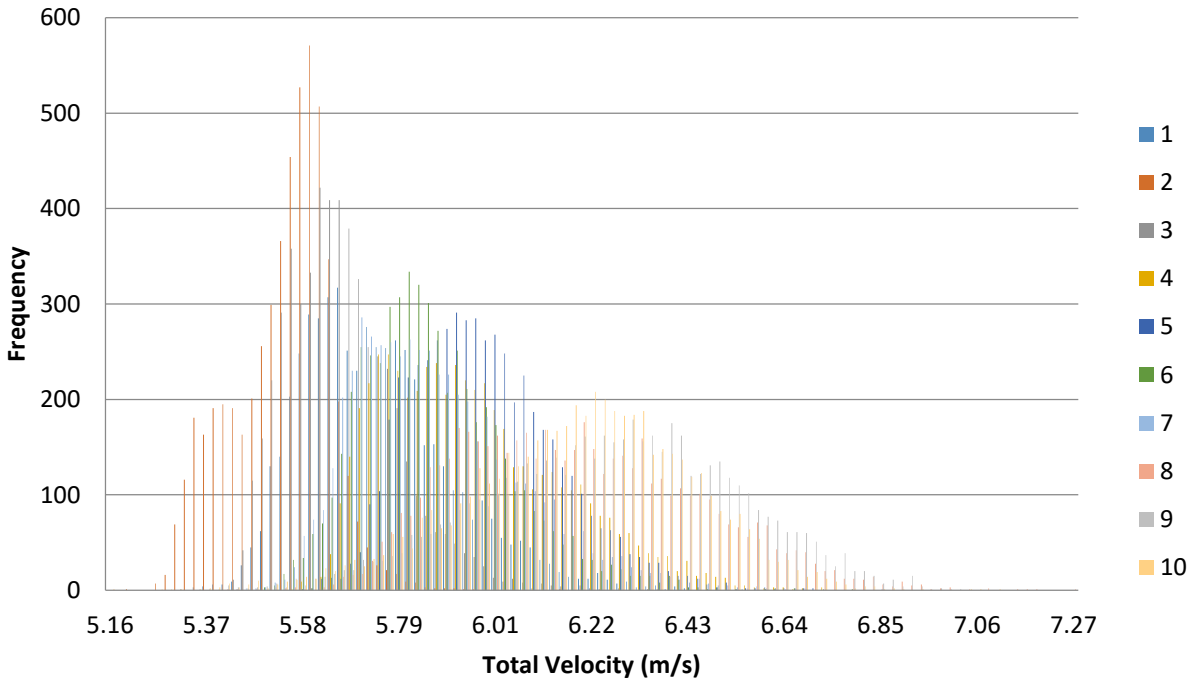


Figure 1. Velocity histogram for each interval (100 bins).

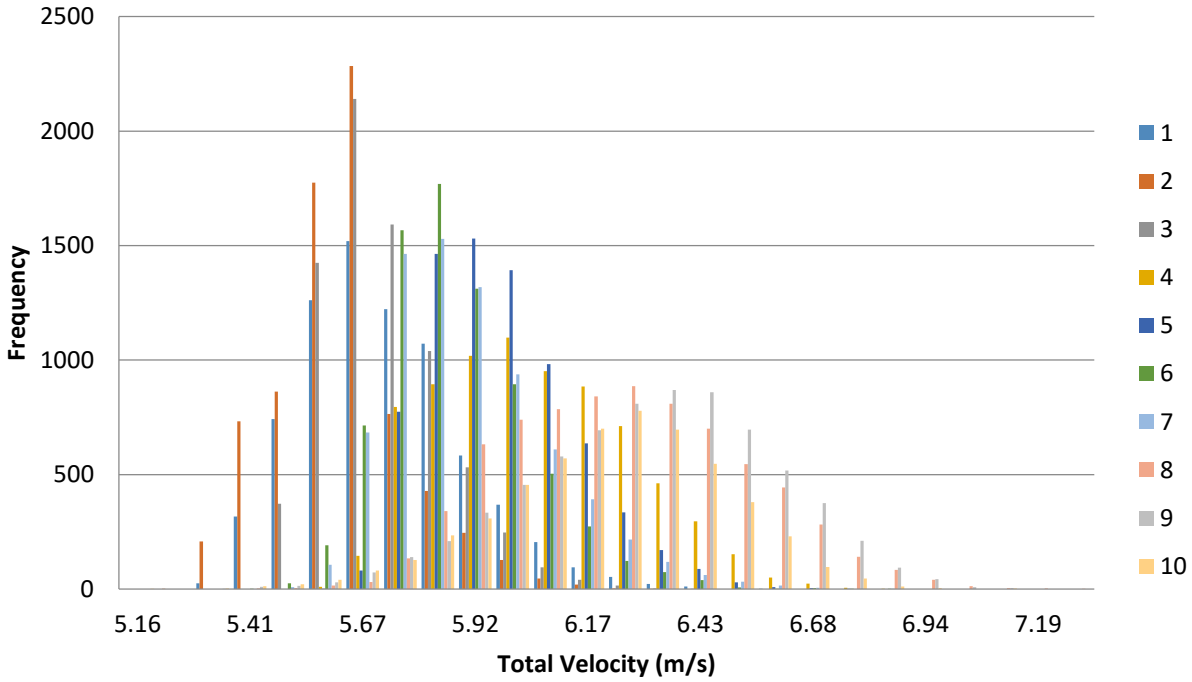
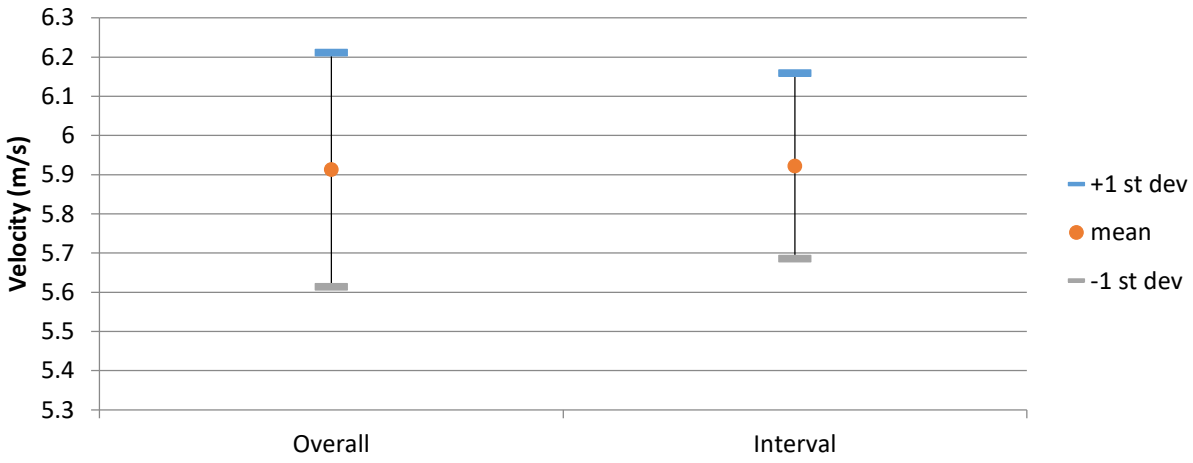
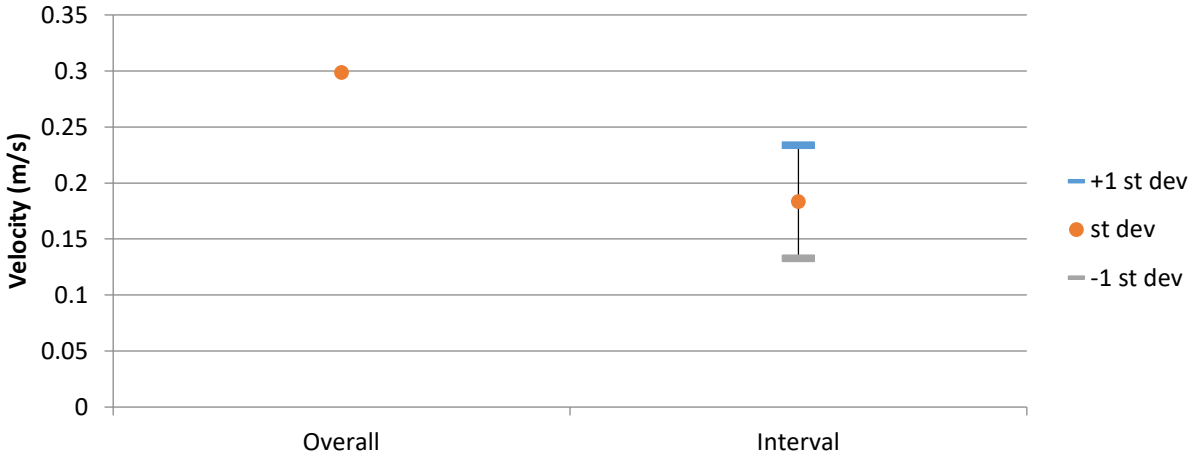


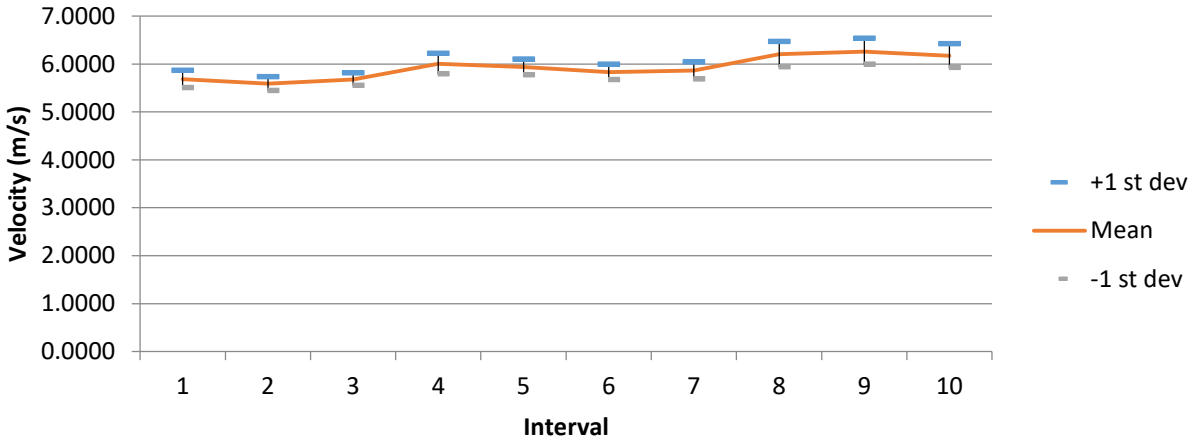
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 242
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: G4
First Sample Date: 23-Aug-13
First Sample Time: 09:15:55.671

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.4068	4.2134	4.7317	0.1440
u	5.3100	3.5600	4.4775	0.2131
v	2.5700	0.6520	1.4679	0.2312
w	0.2920	-1.0300	-0.2680	0.1899

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.4068	4.3637	4.7956	0.1376	2.9467
2	5.3094	4.2886	4.7652	0.1404	3.2281
3	5.2990	4.2171	4.7200	0.1524	3.2173
4	5.2422	4.2134	4.6973	0.1511	3.1489
5	5.1912	4.2562	4.6990	0.1480	2.7729
6	5.2343	4.3406	4.7380	0.1314	2.9479
7	5.3407	4.3400	4.7350	0.1396	2.6684
8	5.2071	4.3720	4.7291	0.1262	2.9743
9	5.1905	4.2942	4.7201	0.1404	3.0271
10	5.2186	4.2485	4.7172	0.1428	2.9796
		Average	4.7317	0.1410	2.9911
		St Dev	0.0298	0.0082	0.1702

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	4.5278	1.4438	-0.5565	0.2053	0.2074	0.1885	4.5336	4.5816	4.1640
2	4.5206	1.4518	-0.1874	0.2063	0.2528	0.2059	4.5646	5.5917	4.5553
3	4.5108	1.3331	-0.2792	0.2136	0.1973	0.1201	4.7363	4.3750	2.6617
4	4.4837	1.3424	-0.2405	0.2151	0.2187	0.1731	4.7978	4.8782	3.8608
5	4.4654	1.4304	-0.0170	0.2204	0.2338	0.1146	4.9367	5.2348	2.5658
6	4.4616	1.5188	-0.3979	0.2020	0.2096	0.1010	4.5267	4.6975	2.2645
7	4.4734	1.5015	-0.2769	0.2103	0.2080	0.0965	4.7003	4.6498	2.1562
8	4.4239	1.6191	-0.3028	0.2029	0.2151	0.0929	4.5870	4.8624	2.1003
9	4.4636	1.4922	-0.2418	0.2098	0.1937	0.0963	4.6996	4.3386	2.1578
10	4.4439	1.5459	-0.1797	0.2202	0.2143	0.0864	4.9545	4.8216	1.9445

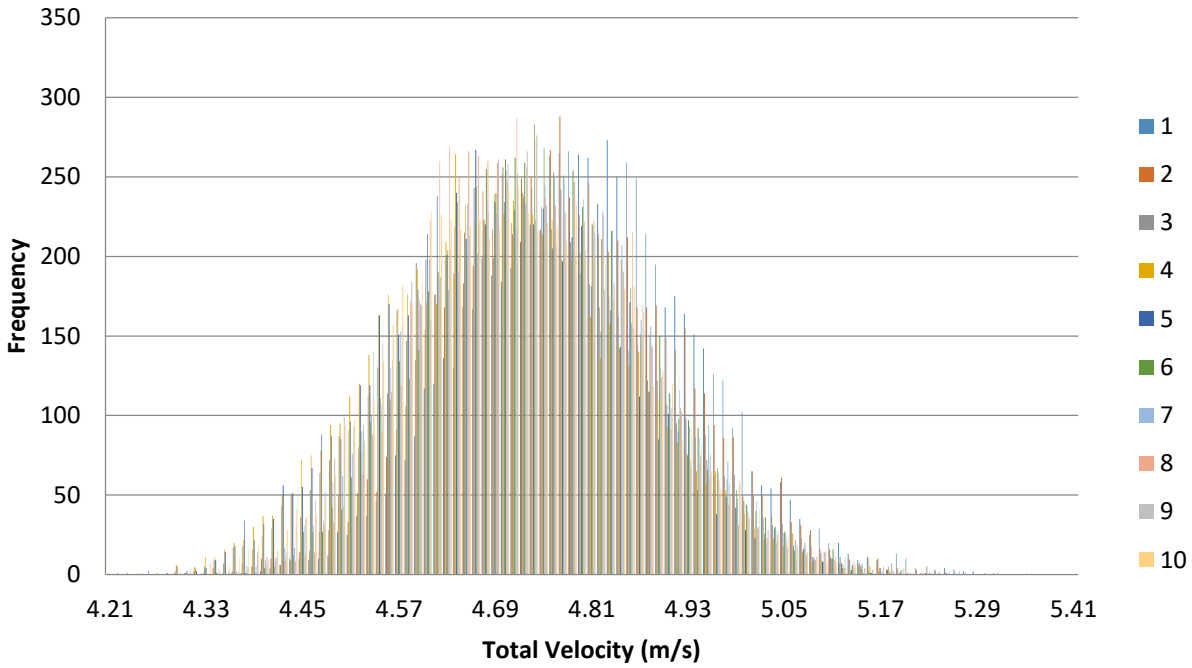


Figure 1. Velocity histogram for each interval (100 bins).

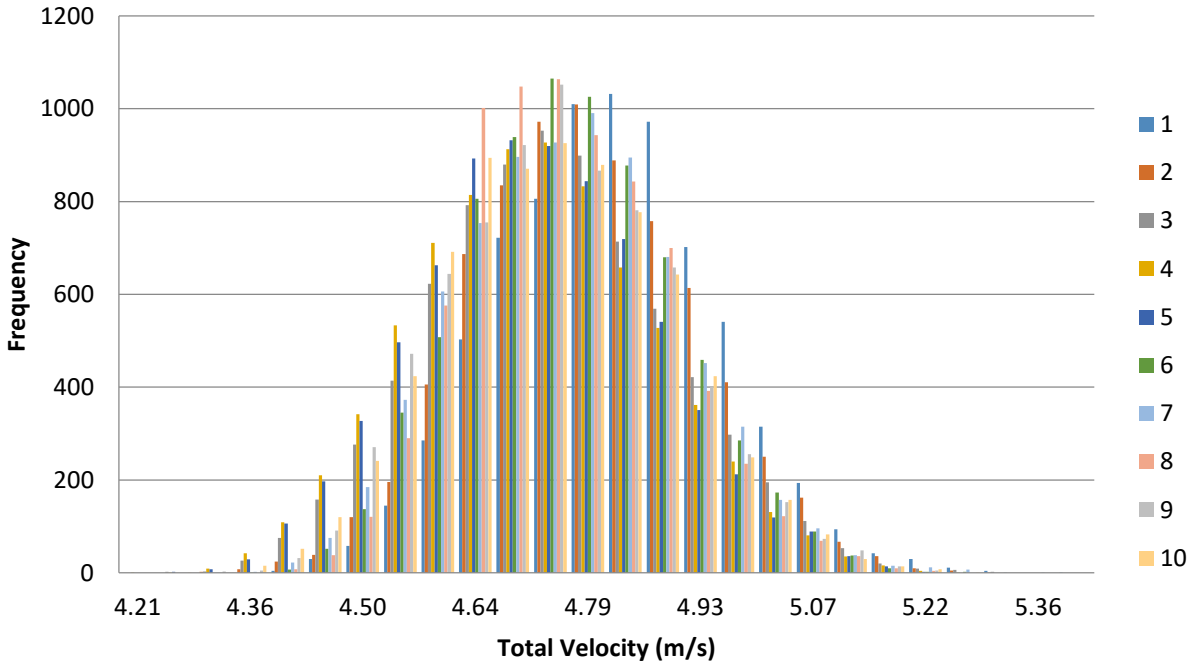
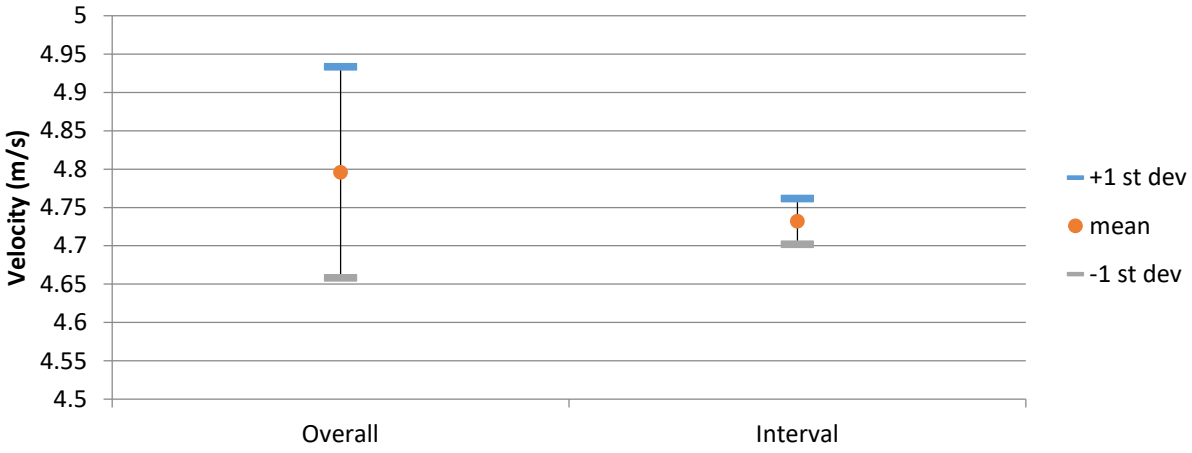
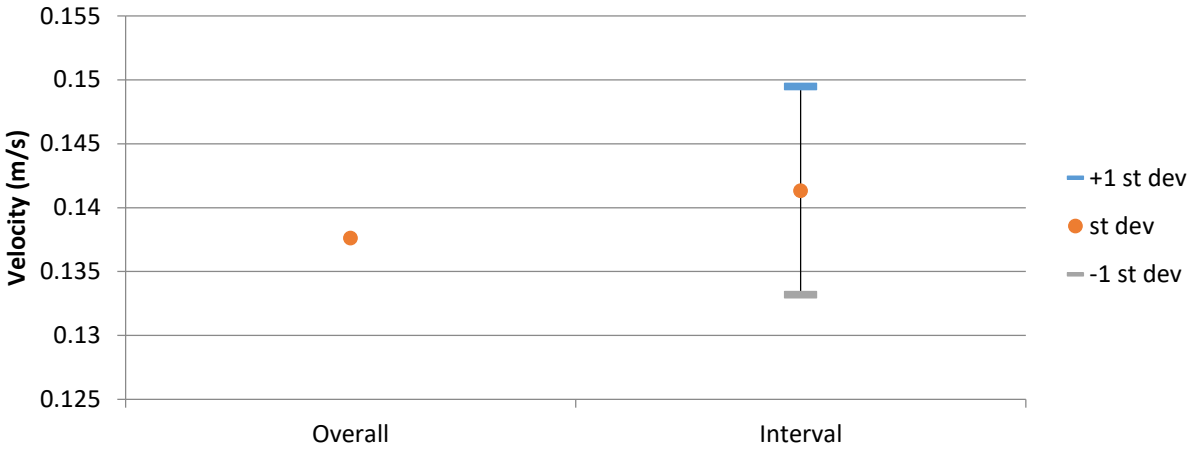


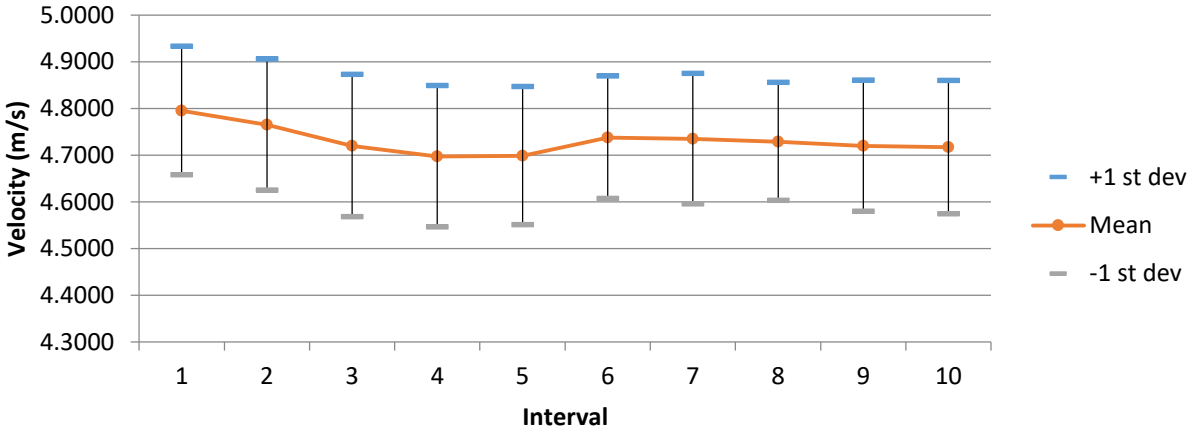
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 243
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: G5
First Sample Date: 23-Aug-13
First Sample Time: 09:17:38.453

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.0427	4.4263	4.7013	0.0690
u	4.9900	3.9600	4.4331	0.1199
v	2.4600	0.7060	1.5187	0.2093
w	0.2180	-0.8620	-0.2488	0.1684

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	4.9427	4.4381	4.6960	0.0670	1.4127
2	4.9704	4.4550	4.7011	0.0664	1.5199
3	4.9552	4.4263	4.7031	0.0715	1.3806
4	5.0164	4.4929	4.7436	0.0655	1.3246
5	4.9400	4.4951	4.7284	0.0626	1.5489
6	5.0427	4.4290	4.7020	0.0728	1.3306
7	4.9510	4.4704	4.6890	0.0624	1.4656
8	4.9464	4.4612	4.6956	0.0688	1.2510
9	4.9002	4.4824	4.6835	0.0586	1.3527
10	4.9079	4.4512	4.6705	0.0632	1.4014
		Average	4.7013	0.0659	1.3988
		St Dev	0.0211	0.0044	0.0873

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	4.4448	1.4785	-0.2892	0.0987	0.1071	0.0986	2.2202	2.4107	2.2194
2	4.4937	1.3528	-0.2191	0.0942	0.1186	0.1007	2.0954	2.6402	2.2413
3	4.4480	1.4706	-0.3485	0.1037	0.1296	0.1671	2.3303	2.9126	3.7563
4	4.4866	1.4613	-0.4150	0.1209	0.2100	0.1009	2.6958	4.6804	2.2490
5	4.4372	1.5601	-0.4059	0.1125	0.2008	0.1442	2.5362	4.5253	3.2493
6	4.5105	1.3052	-0.1170	0.1047	0.1579	0.1294	2.3222	3.5006	2.8687
7	4.4584	1.4361	-0.0590	0.1012	0.1735	0.0847	2.2690	3.8923	1.8994
8	4.3513	1.7262	-0.2653	0.1048	0.1618	0.1788	2.4090	3.7179	4.1100
9	4.3374	1.7454	-0.1996	0.0998	0.1239	0.1168	2.3017	2.8568	2.6938
10	4.3626	1.6503	-0.1694	0.1024	0.1195	0.0900	2.3479	2.7389	2.0625

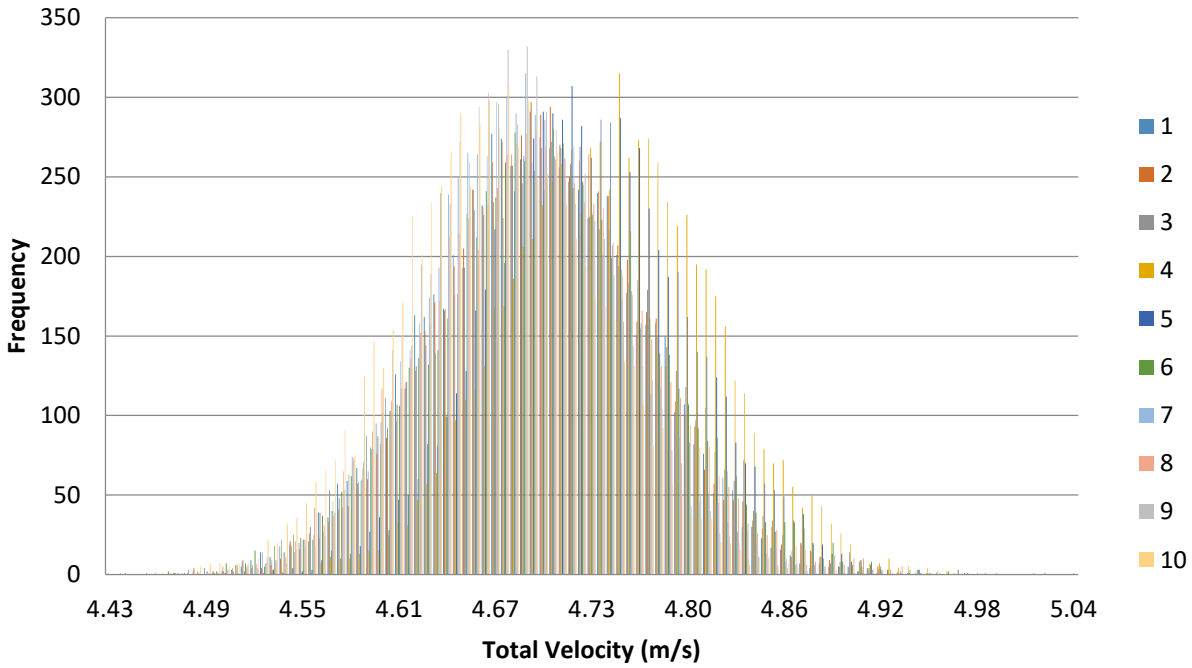


Figure 1. Velocity histogram for each interval (100 bins).

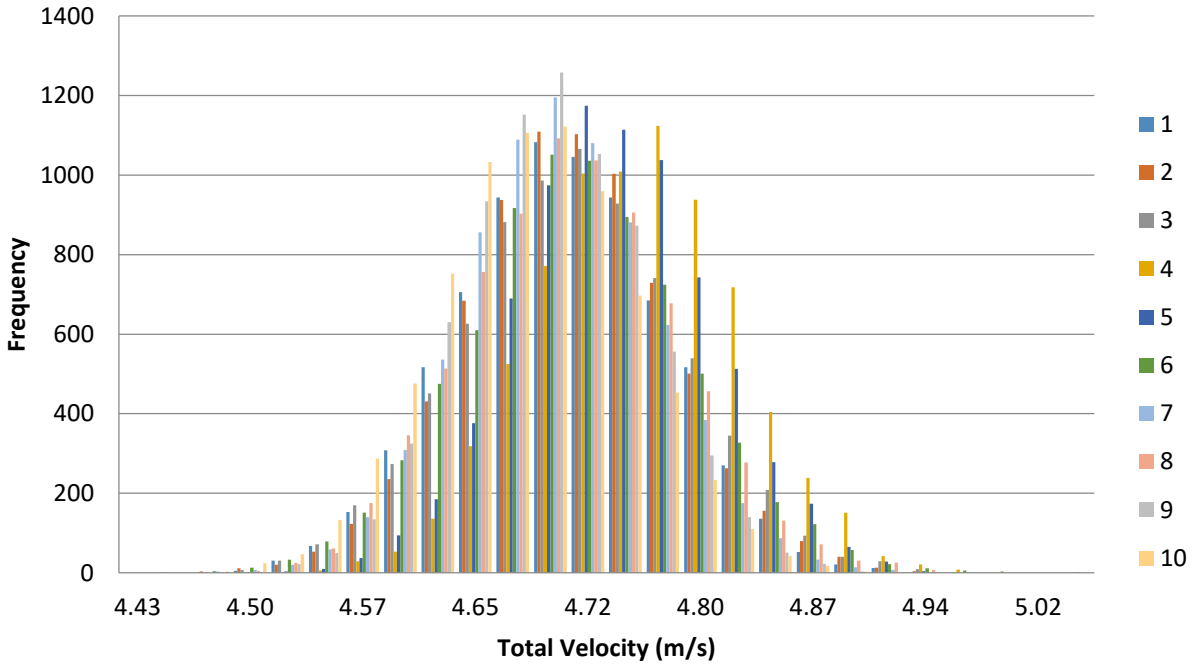
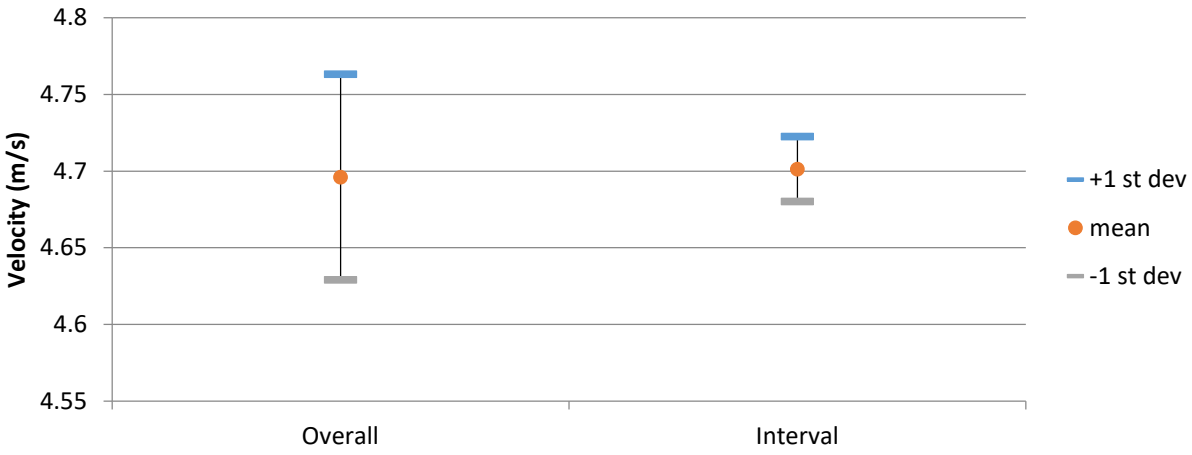
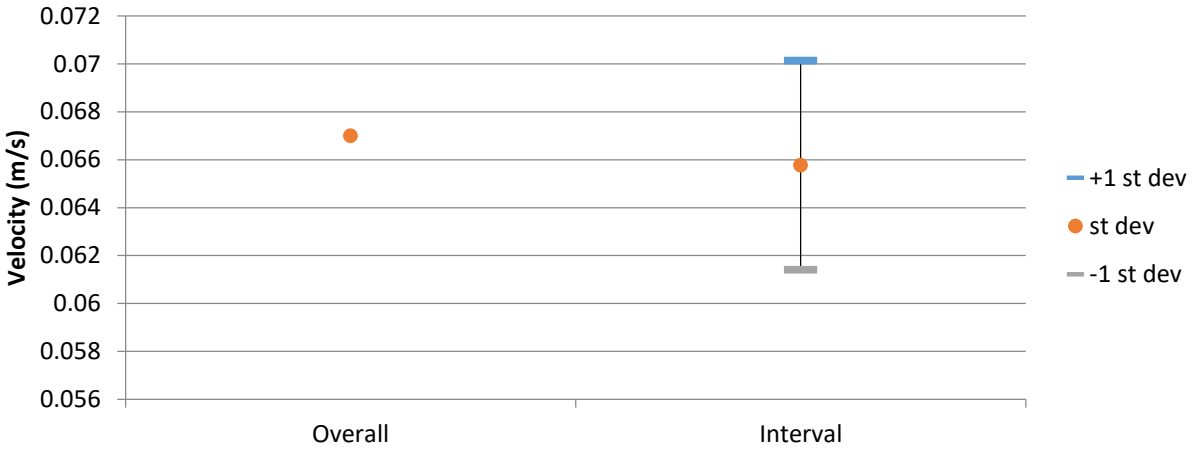


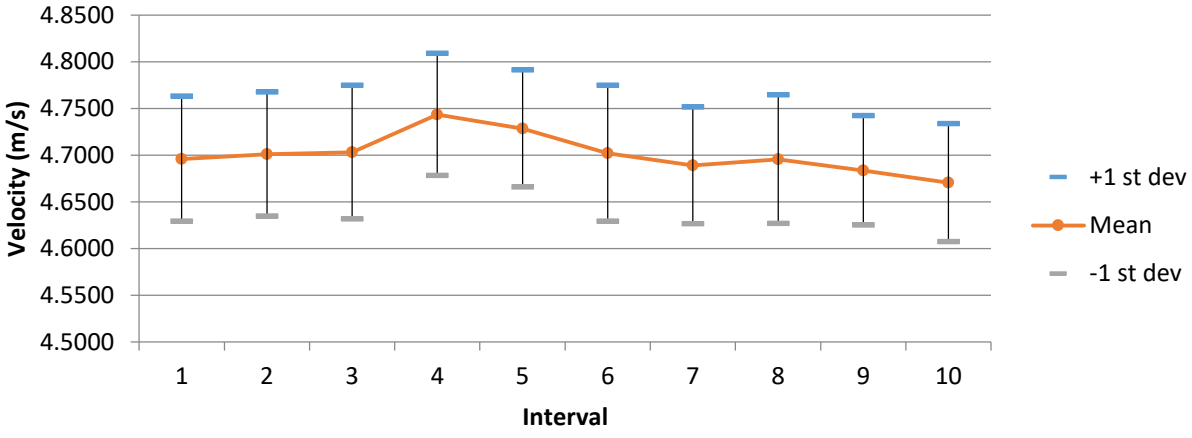
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 244
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: G3
First Sample Date: 23-Aug-13
First Sample Time: 09:19:31.265

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	6.2389	4.9005	5.2631	0.1086
u	5.1300	4.4600	4.7234	0.0685
v	3.5400	1.3000	2.0402	0.2391
w	-0.5860	-1.8000	-1.0709	0.1755

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.6343	5.1227	5.3273	0.0624	1.1475
2	5.5249	5.0726	5.2611	0.0604	1.0690
3	5.3711	4.9589	5.1964	0.0556	3.0240
4	6.2389	5.1286	5.4292	0.1642	1.2492
5	5.5995	5.0925	5.2688	0.0658	1.4327
6	5.7476	5.1129	5.3177	0.0762	1.4788
7	5.4651	4.9005	5.1627	0.0763	1.3704
8	5.5873	5.0076	5.1975	0.0712	0.9533
9	5.5346	5.0807	5.2320	0.0499	0.8127
10	5.5180	5.0790	5.2388	0.0426	1.3765
		Average	5.2631	0.0724	1.3914
		St Dev	0.0783	0.0340	0.5819

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	4.7846	2.0123	-1.1818	0.0640	0.1860	0.0816	1.3374	3.8879	1.7050
2	4.7511	1.9839	-1.0634	0.0660	0.1558	0.1226	1.3884	3.2795	2.5813
3	4.7430	1.9147	-0.8988	0.0695	0.1498	0.0893	1.4661	3.1574	1.8821
4	4.7361	2.3113	-1.2592	0.0533	0.3348	0.1724	1.1259	7.0685	3.6400
5	4.7265	2.1055	-0.9740	0.0538	0.1616	0.1169	1.1376	3.4195	2.4741
6	4.7135	2.2042	-1.0765	0.0445	0.1838	0.1176	0.9431	3.8995	2.4947
7	4.7068	1.9162	-0.8787	0.0729	0.1970	0.1302	1.5480	4.1846	2.7662
8	4.6939	1.9115	-1.1268	0.0711	0.2169	0.1005	1.5137	4.6216	2.1405
9	4.6916	1.9220	-1.2732	0.0657	0.1856	0.1098	1.4005	3.9561	2.3396
10	4.6869	2.1204	-0.9766	0.0508	0.1473	0.0733	1.0830	3.1432	1.5643

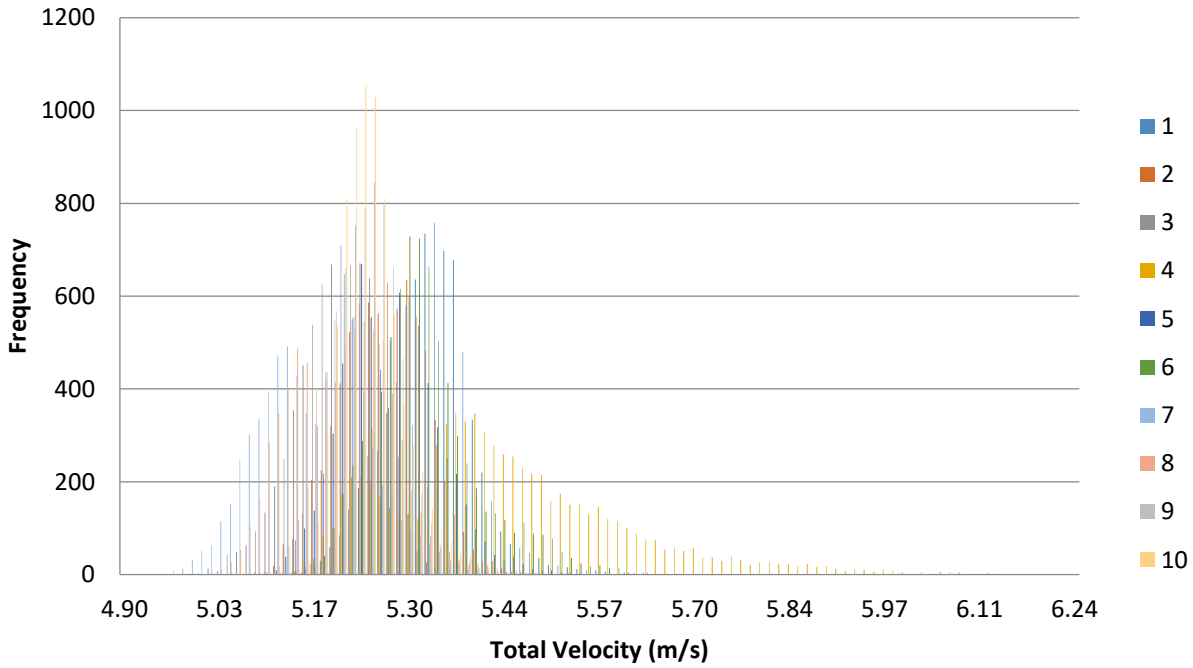


Figure 1. Velocity histogram for each interval (100 bins).

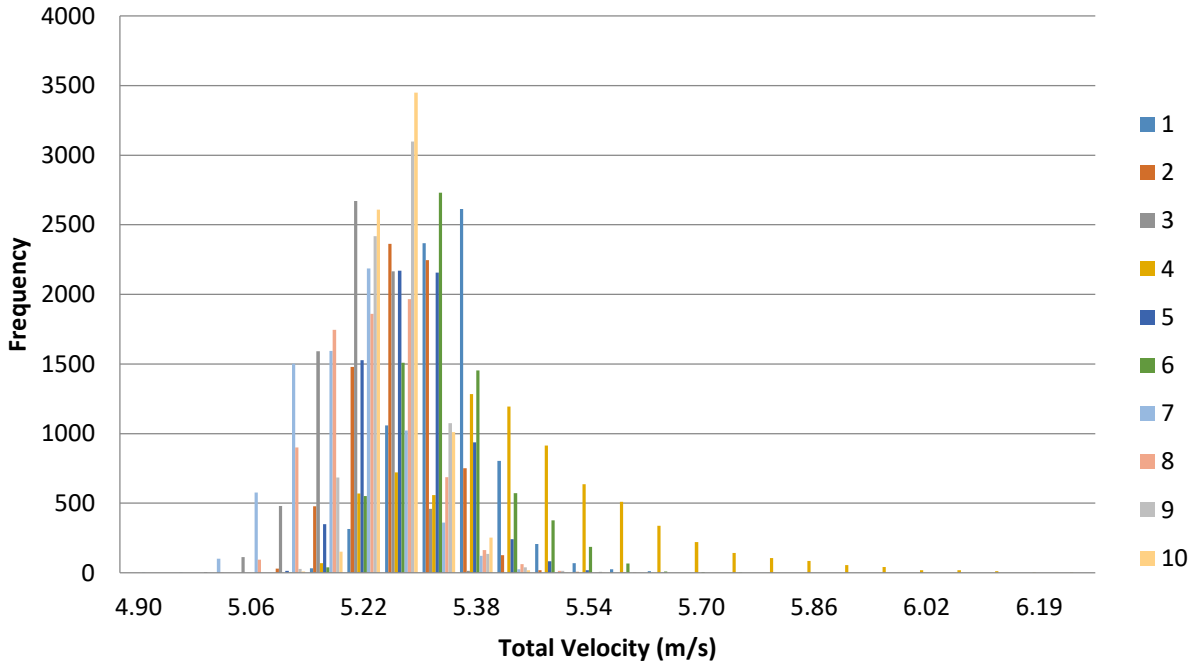
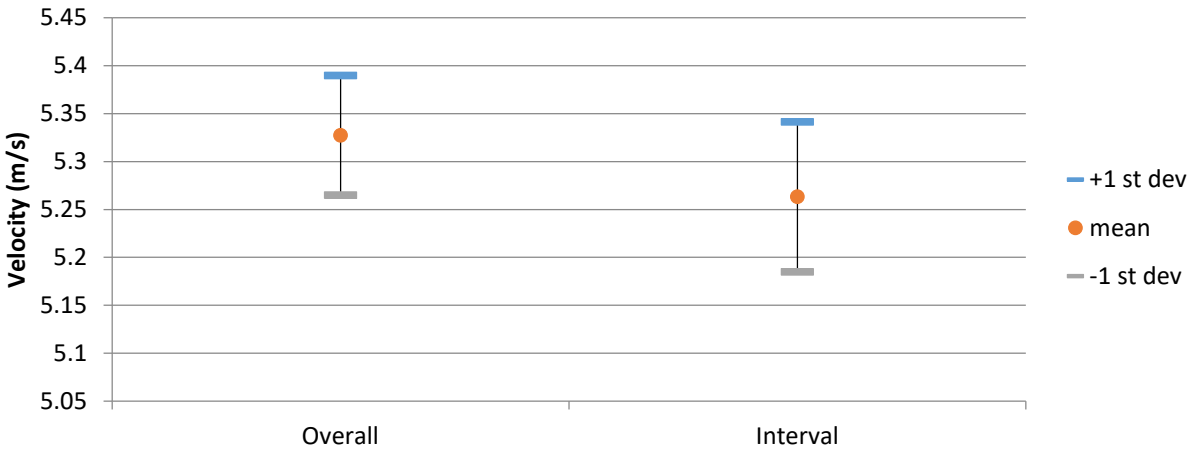
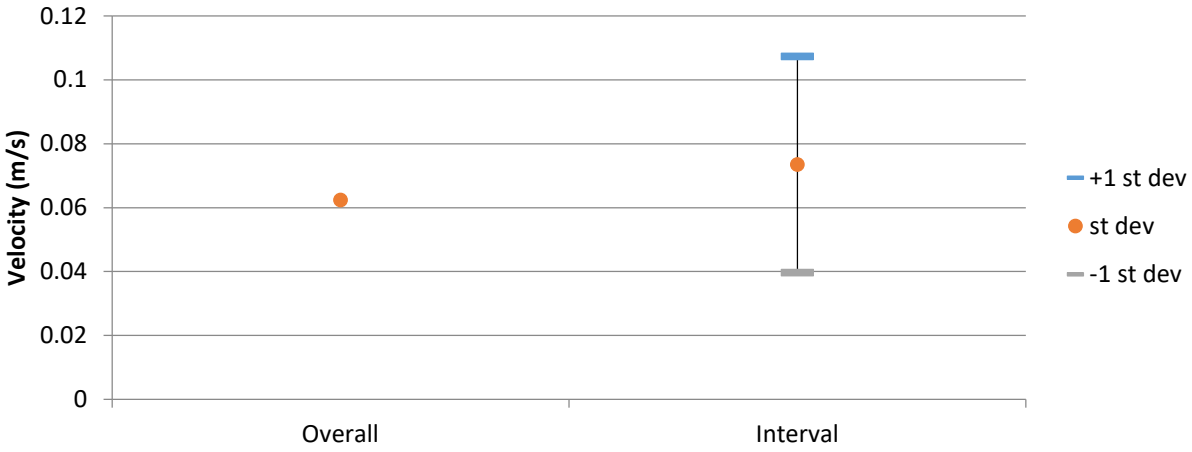


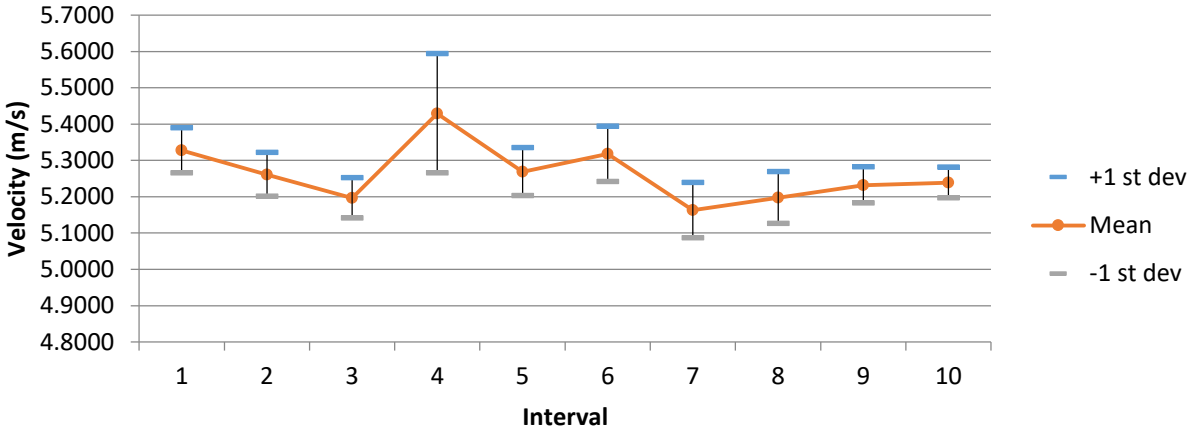
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 245
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 23-Aug-13
First Sample Time: 09:21:25.625

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.9073	5.4001	5.6599	0.0620
u	5.8600	5.1700	5.5028	0.0916
v	0.6130	-0.8950	-0.3070	0.2083
w	-0.4010	-2.0900	-1.2290	0.3172

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.8821	5.4375	5.6894	0.0625	1.0378
2	5.8982	5.4437	5.6714	0.0589	1.0693
3	5.8916	5.4558	5.6689	0.0606	1.2240
4	5.9073	5.4306	5.6627	0.0693	1.0329
5	5.8691	5.4105	5.6353	0.0582	1.0544
6	5.8585	5.4463	5.6393	0.0595	1.0292
7	5.8343	5.4001	5.6404	0.0581	1.0206
8	5.8538	5.4533	5.6634	0.0578	1.0497
9	5.8962	5.4436	5.6667	0.0595	0.9458
10	5.8546	5.4537	5.6613	0.0535	1.0562
		Average	5.6599	0.0598	1.0520
		St Dev	0.0169	0.0041	0.0658

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.5188	0.0170	-1.3312	0.0874	0.2240	0.2943	1.5828	4.0589	5.3330
2	5.5680	-0.2962	-0.9924	0.0673	0.2618	0.1417	1.2093	4.7018	2.5450
3	5.6144	-0.3319	-0.6862	0.0623	0.1310	0.1311	1.1091	2.3333	2.3344
4	5.5572	-0.2292	-0.9934	0.1064	0.2390	0.2838	1.9149	4.3016	5.1064
5	5.5001	-0.3208	-1.1685	0.0631	0.1306	0.1383	1.1478	2.3753	2.5150
6	5.4376	-0.4639	-1.4032	0.0642	0.1063	0.1944	1.1802	1.9549	3.5748
7	5.4675	-0.4437	-1.2997	0.0581	0.1163	0.1478	1.0626	2.1266	2.7028
8	5.4867	-0.3378	-1.3506	0.0591	0.0724	0.1647	1.0766	1.3199	3.0015
9	5.4267	-0.4162	-1.5643	0.0626	0.1166	0.1684	1.1543	2.1490	3.1033
10	5.4513	-0.2472	-1.5007	0.0585	0.0917	0.1046	1.0733	1.6828	1.9193

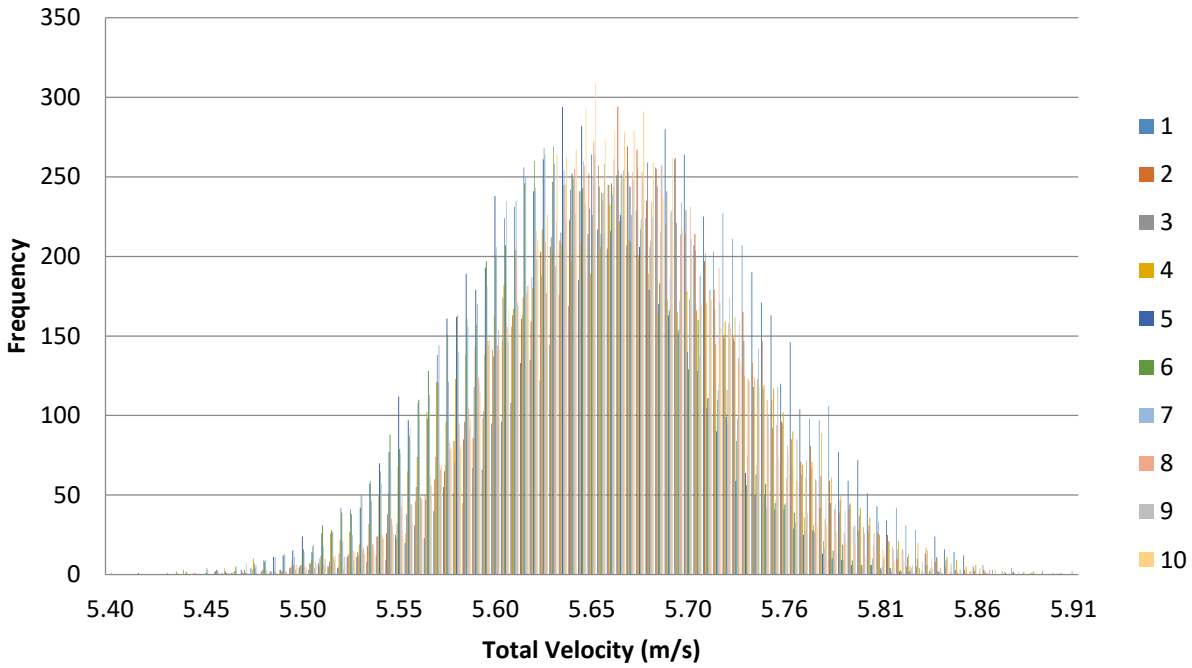


Figure 1. Velocity histogram for each interval (100 bins).

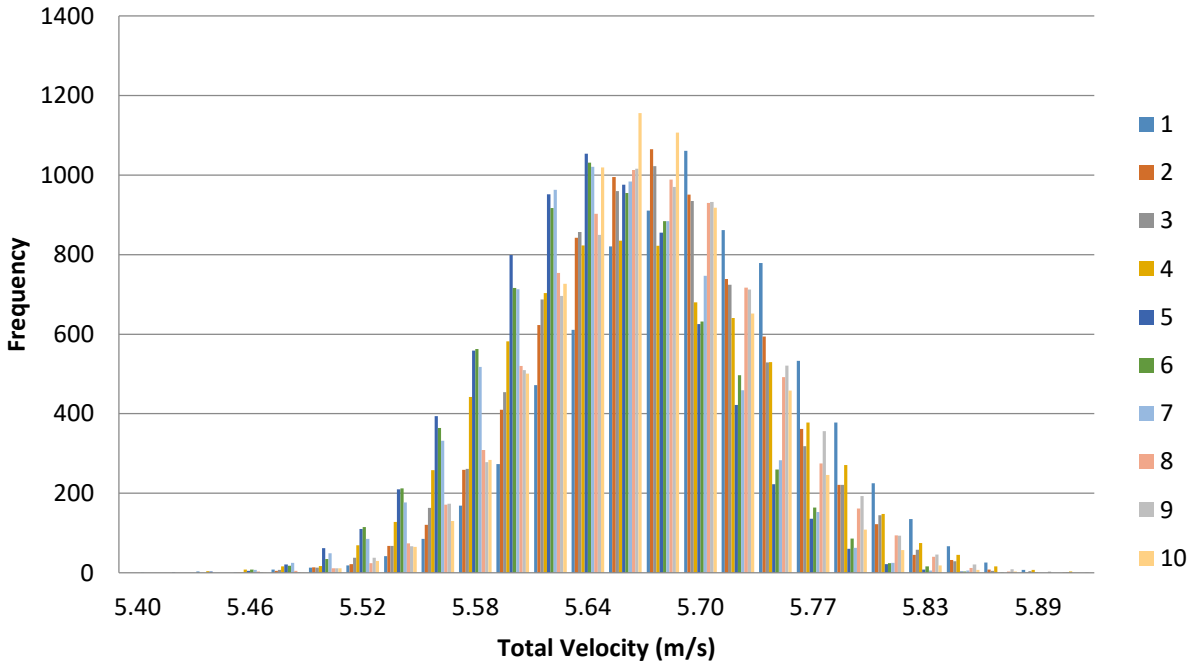
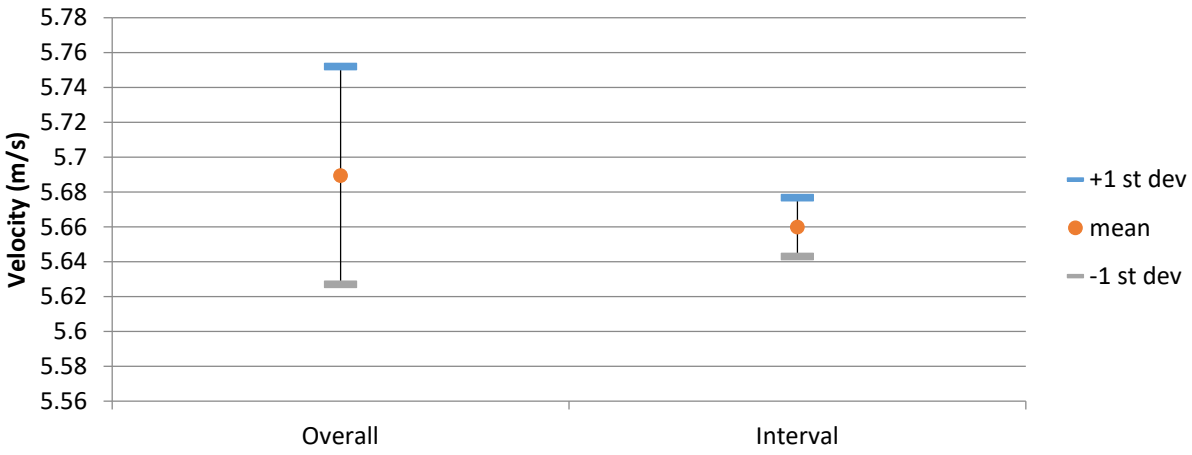
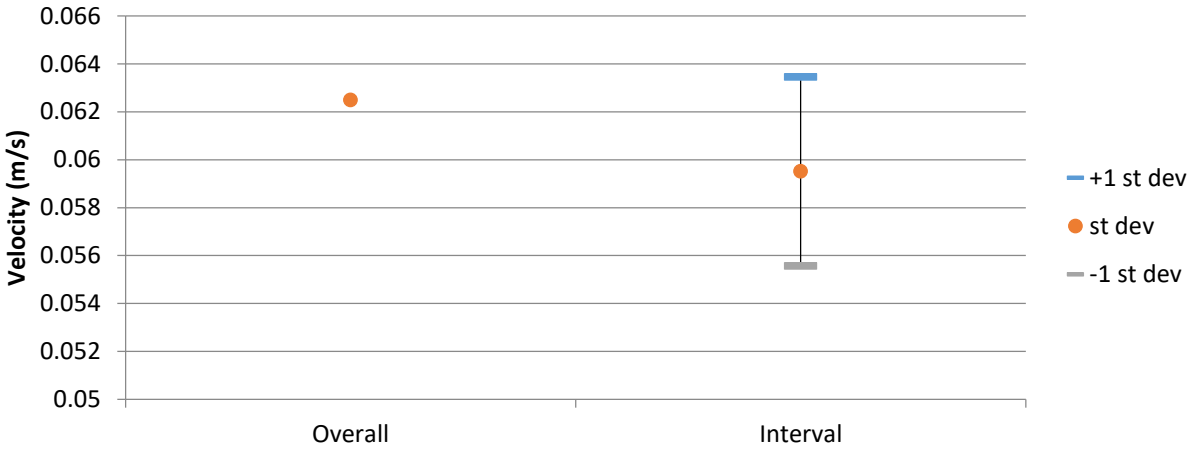


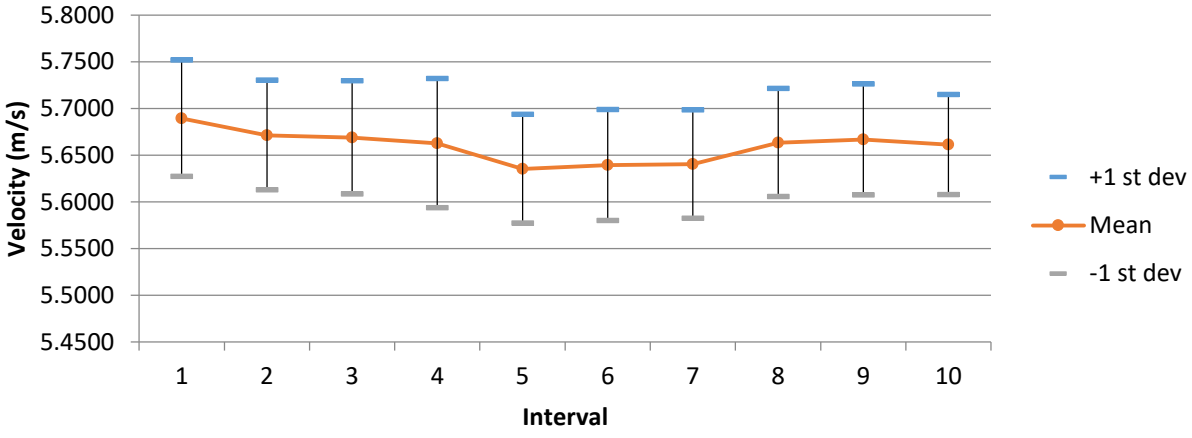
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 246
Blockage Condition: 2D at 1'
Blower Frequency: 50 Hz
Inlet Probe Location: e3
First Sample Date: 23-Aug-13
First Sample Time: 09:52:20.265

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	20.2321	1.7060	11.8418	0.8868
u	18.3000	1.2700	11.3937	0.9446
v	11.6000	-12.8000	-1.7126	2.0088
w	12.6000	-9.4200	-0.7574	1.6622

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	20.2321	1.7060	11.3715	1.1338	9.9704	76	0.61 %
2	19.1574	4.7614	11.6626	1.0624	9.1097	26	0.21 %
3	18.0179	4.1234	11.8948	0.9111	7.6594	6	0.05 %
4	16.3863	4.6589	11.9052	0.8415	7.0686	6	0.05 %
5	18.5744	6.5062	11.8799	0.6869	5.7816	6	0.05 %
6	15.9780	6.7869	12.1442	0.7373	6.0710	3	0.02 %
7	16.8338	5.0458	11.6824	0.7499	6.4189	34	0.27 %
8	19.5960	4.9157	12.1091	0.9642	7.9625	59	0.47 %
9	16.3202	5.6849	11.9142	0.6368	5.3447	0	0.00 %
10	16.1300	6.6296	11.8507	0.7451	6.2871	9	0.07 %
		Average	11.8415	0.8469	7.1674		
		St dev	0.2134	0.1576	1.4245		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.8711	-1.6627	0.4674	1.2382	2.0390	1.9349	11.3900	18.7565	17.7982
2	11.0088	-3.0201	-0.1330	1.0665	1.5518	1.8079	9.6881	14.0958	16.4221
3	11.1719	-3.3709	-0.3505	1.0101	1.3548	1.7785	9.0416	12.1272	15.9196
4	11.3975	-2.6681	-0.7391	0.9131	1.4405	1.4026	8.0117	12.6387	12.3061
5	11.5977	-1.1668	-1.2422	0.7015	1.5237	1.1750	6.0488	13.1381	10.1316
6	11.8148	0.6475	-1.7011	0.5973	1.7394	1.3196	5.0559	14.7222	11.1693
7	11.4186	-1.0376	-0.7898	0.8038	1.6062	1.3162	7.0391	14.0663	11.5267
8	11.5490	-1.4374	-0.9409	1.0578	2.4831	1.9867	9.1591	21.5008	17.2025
9	11.5422	-2.1180	-1.2903	0.6475	1.0939	1.1682	5.6096	9.4774	10.1209
10	11.5614	-1.2908	-0.8429	0.7824	1.5801	1.3583	6.7674	13.6669	11.7488

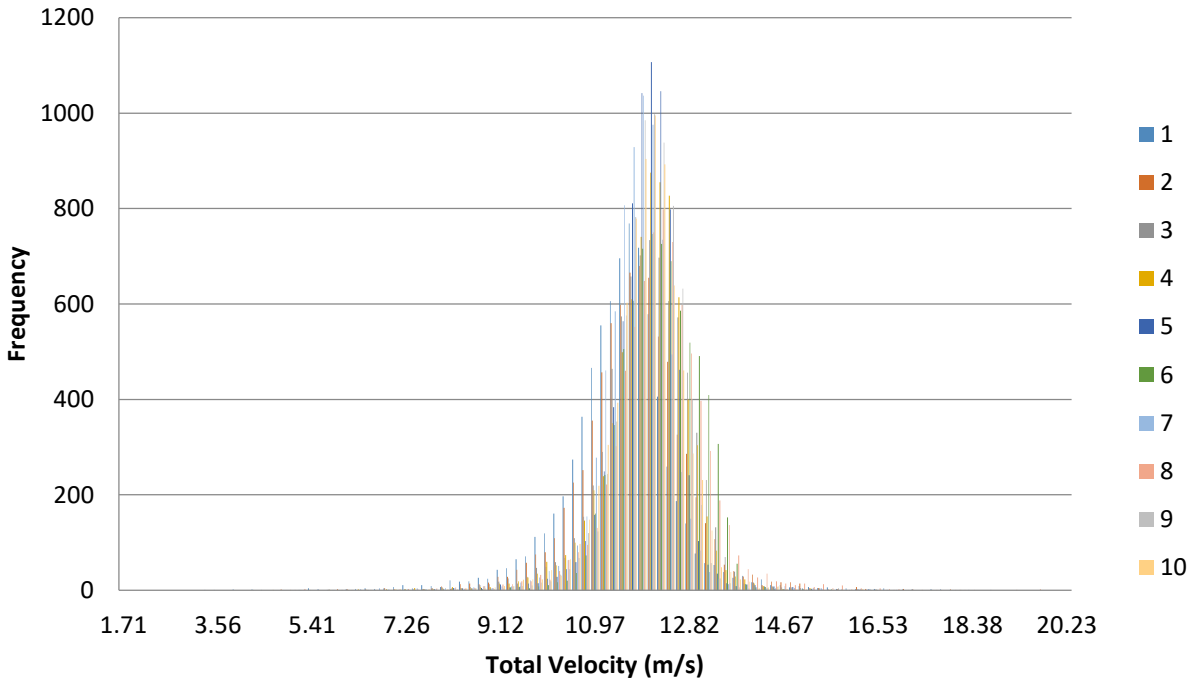


Figure 1. Velocity histogram for each interval (100 bins).

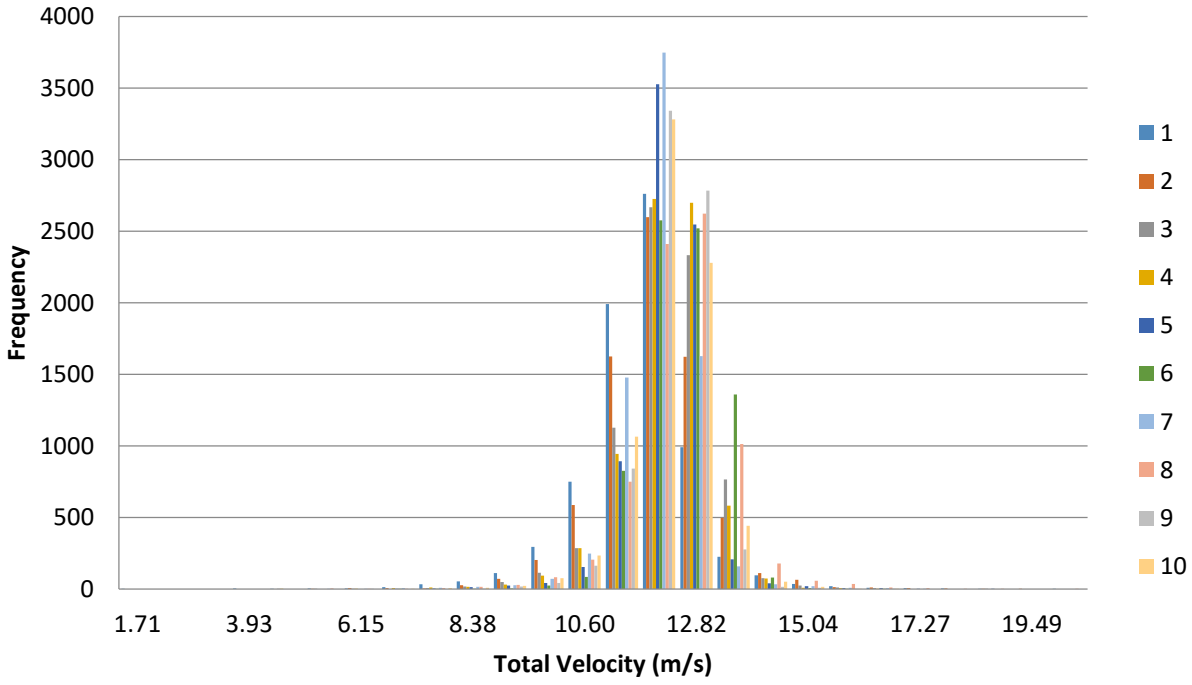
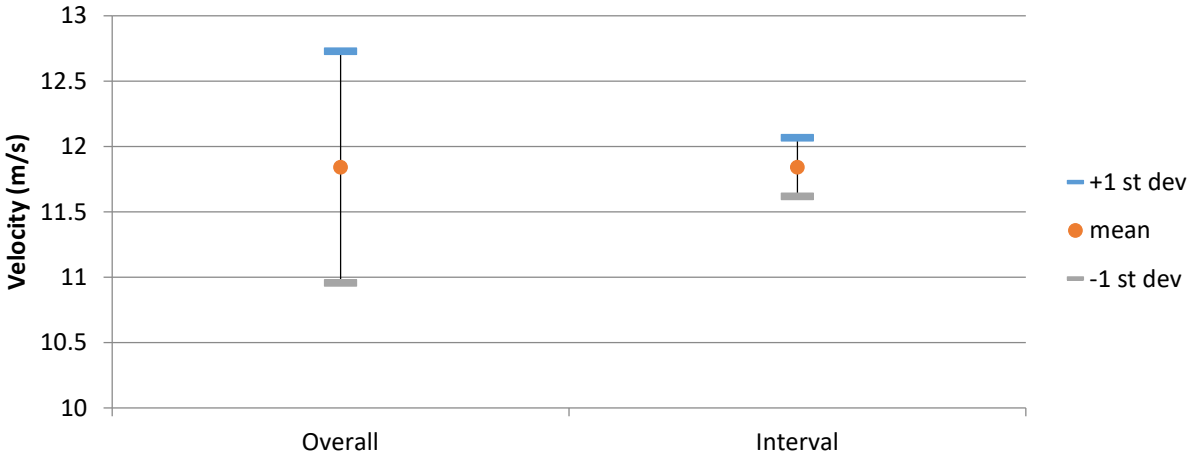
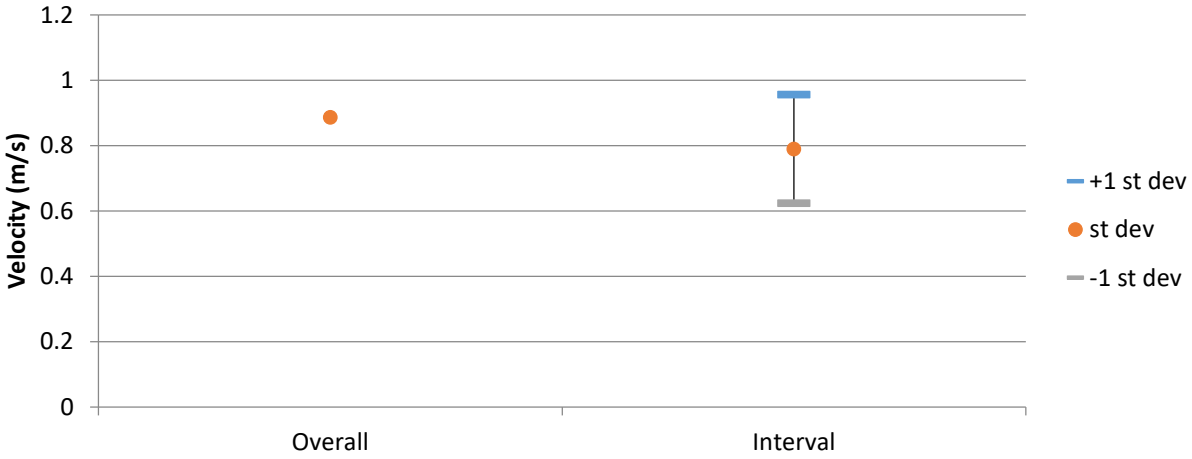


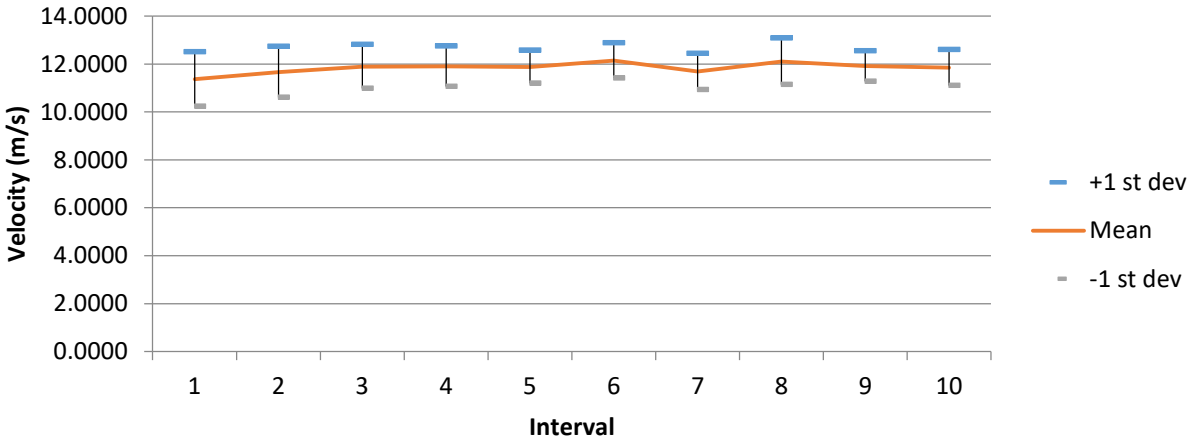
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 247
Blockage Condition: 2D at 1'
Blower Frequency: 50 Hz
Inlet Probe Location: E2
First Sample Date: 23-Aug-13
First Sample Time: 09:54:18.734

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	14.3985	11.9224	13.3195	0.2811
u	13.4000	11.1000	12.4502	0.2700
v	1.2700	-1.8000	-0.6920	0.3808
w	-2.7600	-6.1300	-4.6511	0.3901

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	14.2026	12.2184	13.3539	0.3183	1.9536
2	14.1835	12.2805	13.4125	0.2620	2.0248
3	14.3258	12.3156	13.3799	0.2709	1.7568
4	14.0774	12.4607	13.3006	0.2337	2.2285
5	13.9767	11.9224	13.1078	0.2921	1.9982
6	13.9258	12.1788	13.1636	0.2630	1.7067
7	14.3985	12.5714	13.4151	0.2290	1.9675
8	14.3522	12.2280	13.3762	0.2632	1.8363
9	14.2269	12.5397	13.3829	0.2458	1.7810
10	14.0929	12.0137	13.3028	0.2369	1.9632
		Average	13.3195	0.2615	1.9217
		St Dev	0.1052	0.0278	0.1470

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	12.4227	-0.9573	-4.7838	0.3012	0.3046	0.3470	2.4247	2.4520	2.7930
2	12.5088	-0.5650	-4.7857	0.2400	0.3105	0.3429	1.9189	2.4825	2.7410
3	12.4767	-0.8176	-4.7349	0.2764	0.3116	0.4075	2.2154	2.4979	3.2659
4	12.3909	-0.8462	-4.7453	0.2349	0.2620	0.2620	1.8954	2.1148	2.1141
5	12.3045	-0.7600	-4.4084	0.3137	0.3880	0.4900	2.5494	3.1532	3.9827
6	12.4442	-0.4551	-4.2255	0.2595	0.5082	0.3208	2.0854	4.0834	2.5782
7	12.5246	-0.8576	-4.7152	0.2312	0.2421	0.2688	1.8457	1.9331	2.1459
8	12.5464	-0.5519	-4.5776	0.2500	0.3741	0.3461	1.9925	2.9815	2.7588
9	12.4626	-0.6332	-4.8198	0.2509	0.2785	0.2737	2.0133	2.2343	2.1963
10	12.4206	-0.4761	-4.7151	0.2426	0.3551	0.3253	1.9531	2.8592	2.6193

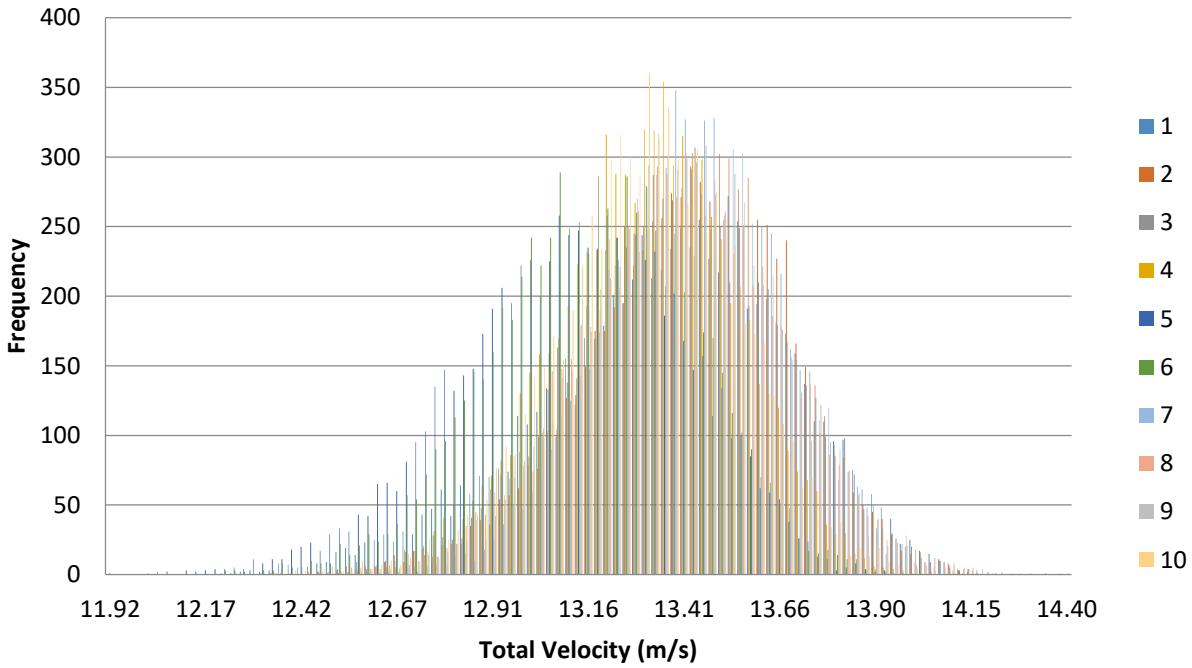


Figure 1. Velocity histogram for each interval (100 bins).

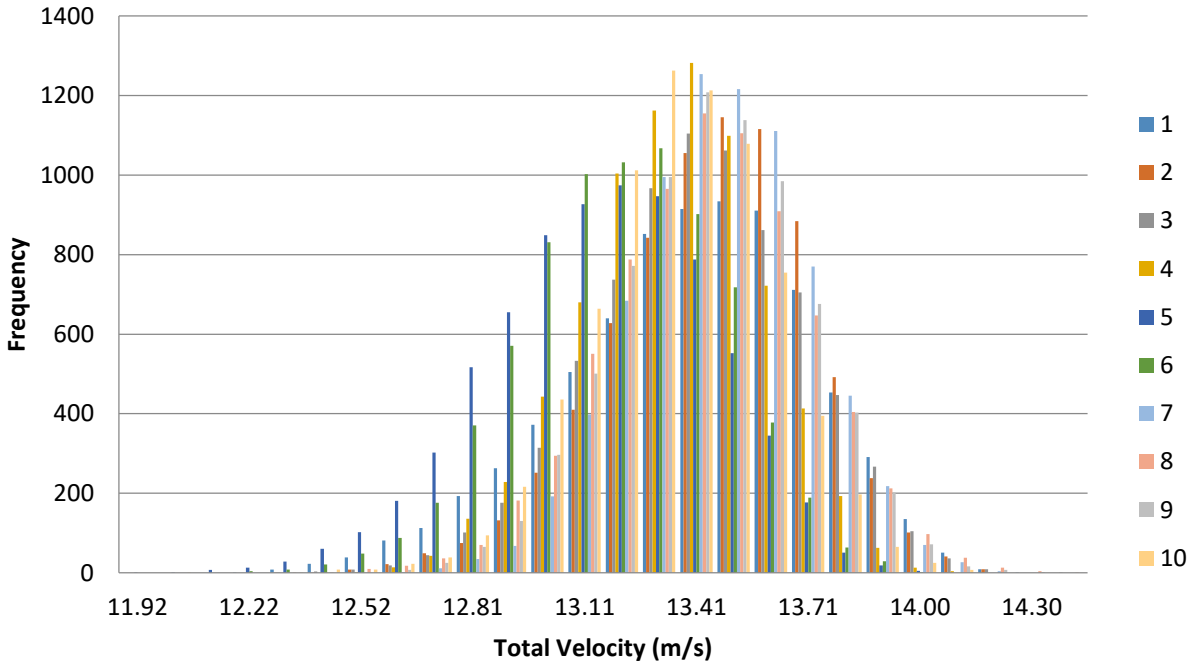
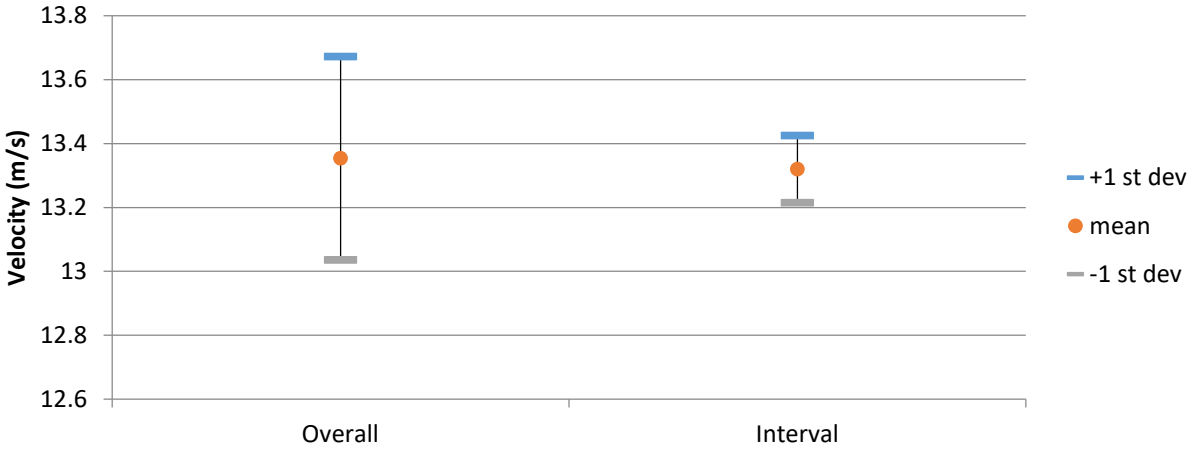
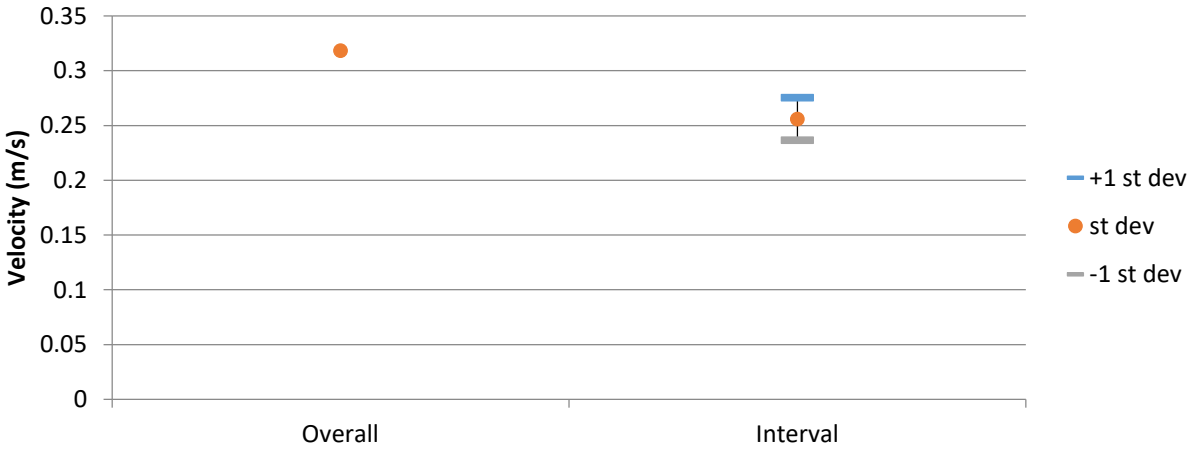


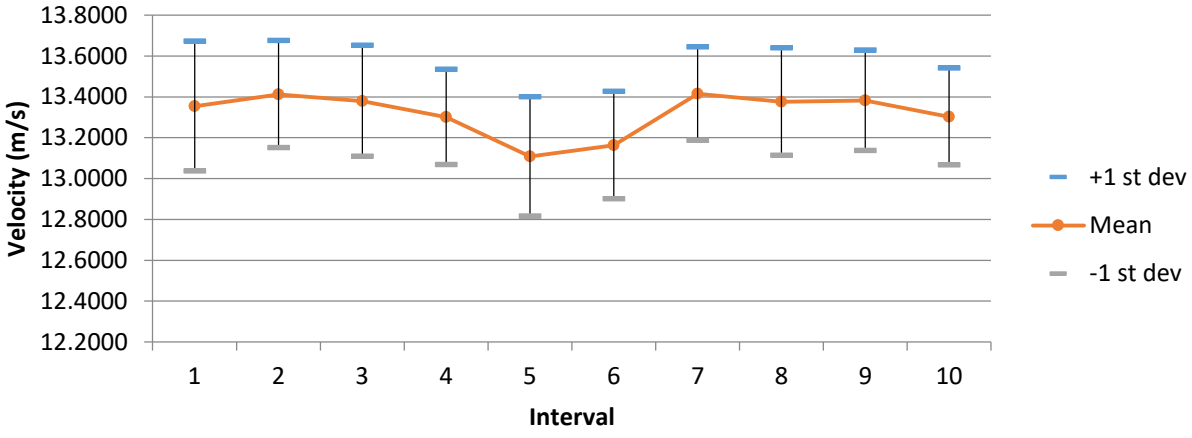
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 248
Blockage Condition: 2D at 1'
Blower Frequency: 50 Hz
Inlet Probe Location: E4
First Sample Date: 23-Aug-13
First Sample Time: 09:55:57.156

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	34.6007	1.4922	14.9709	2.8621
u	30.6000	1.2000	13.4059	2.9022
v	23.2000	-16.9000	-0.4688	3.7980
w	21.0000	-19.1000	0.5888	5.4029

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	30.9509	4.8539	15.5248	2.8116	18.1106	294	2.35 %
2	29.9485	4.6114	15.0554	2.9221	19.4087	371	2.97 %
3	32.6959	4.0947	15.0471	2.8609	19.0128	507	4.06 %
4	31.0743	3.7068	14.5275	2.8713	19.7645	720	5.76 %
5	28.7844	3.0790	14.8706	2.6583	17.8759	339	2.71 %
6	30.9202	3.8956	15.1526	2.7298	18.0155	370	2.96 %
7	29.5598	3.6242	14.9956	2.9814	19.8817	660	5.28 %
8	34.6007	2.7466	14.4865	2.8212	19.4748	502	4.02 %
9	30.4355	4.2074	15.2301	2.8737	18.8686	364	2.91 %
10	30.5198	1.4922	14.7664	2.9391	19.9041	1121	8.97 %
		Average	14.9657	2.8469	19.0317		
		St dev	0.3006	0.0922	0.7485		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	14.0443	-0.3436	-1.3496	2.6786	4.0987	5.0769	19.0722	29.1841	36.1494
2	13.6176	-0.4530	0.0605	3.0449	3.8302	5.0618	22.3601	28.1265	37.1708
3	13.4510	-0.3837	-0.0875	2.8676	3.7778	5.5704	21.3188	28.0854	41.4129
4	12.7665	-0.5599	1.6169	2.9917	3.8486	5.4429	23.4338	30.1457	42.6344
5	13.4944	-0.5238	0.8850	2.6373	3.6432	4.9819	19.5434	26.9981	36.9186
6	13.5673	-0.0321	0.7180	2.7349	3.7013	5.5939	20.1583	27.2807	41.2309
7	13.2442	-0.5772	0.9995	3.0530	3.7911	5.7732	23.0518	28.6245	43.5902
8	12.8841	-0.0888	0.9563	2.7403	3.8845	5.3200	21.2691	30.1499	41.2916
9	13.6943	-0.3371	0.8812	2.7731	3.6434	5.5528	20.2504	26.6055	40.5485
10	13.2246	-1.4979	1.3724	3.2690	3.5284	4.9536	24.7191	26.6805	37.4576

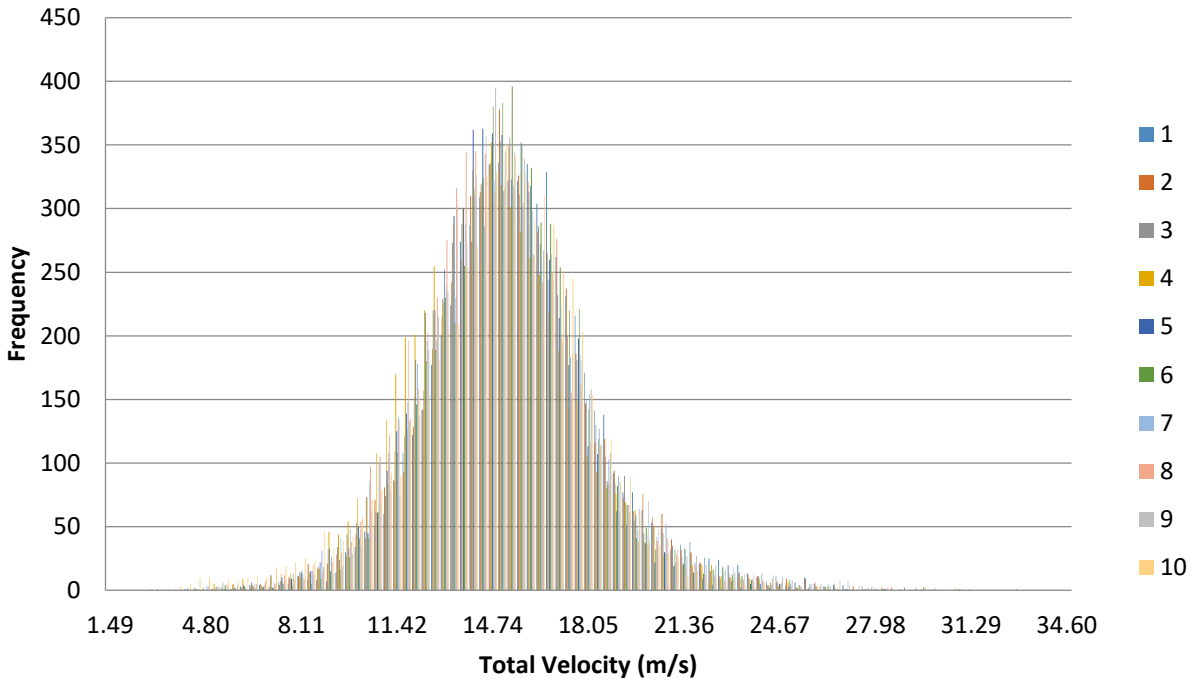


Figure 1. Velocity histogram for each interval (100 bins).

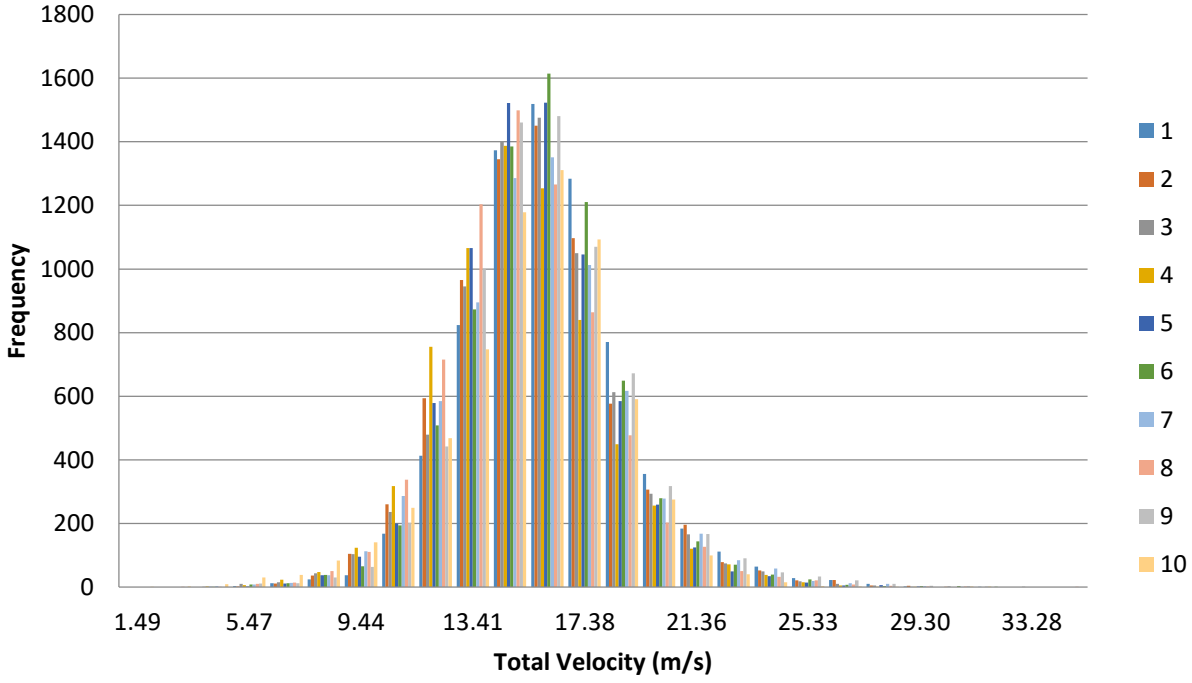
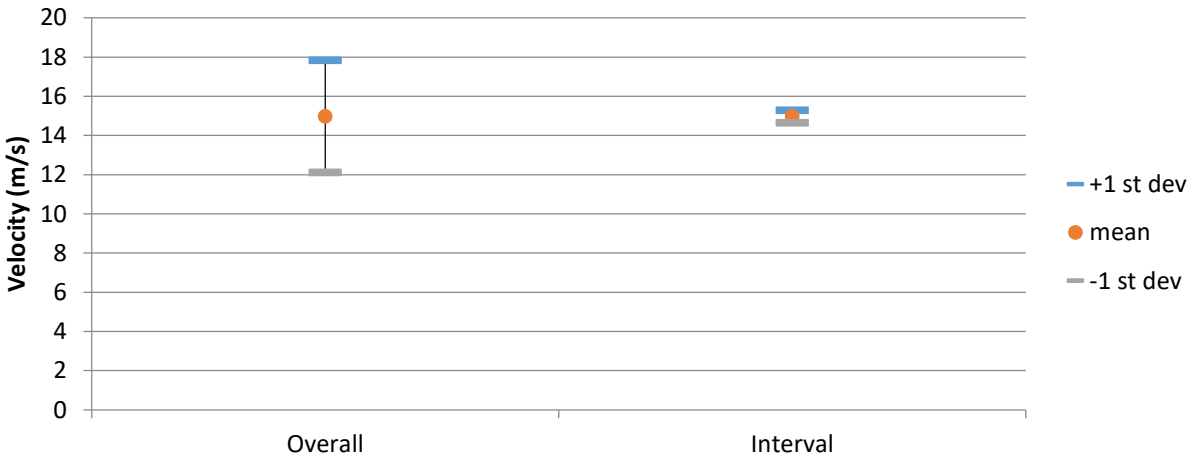
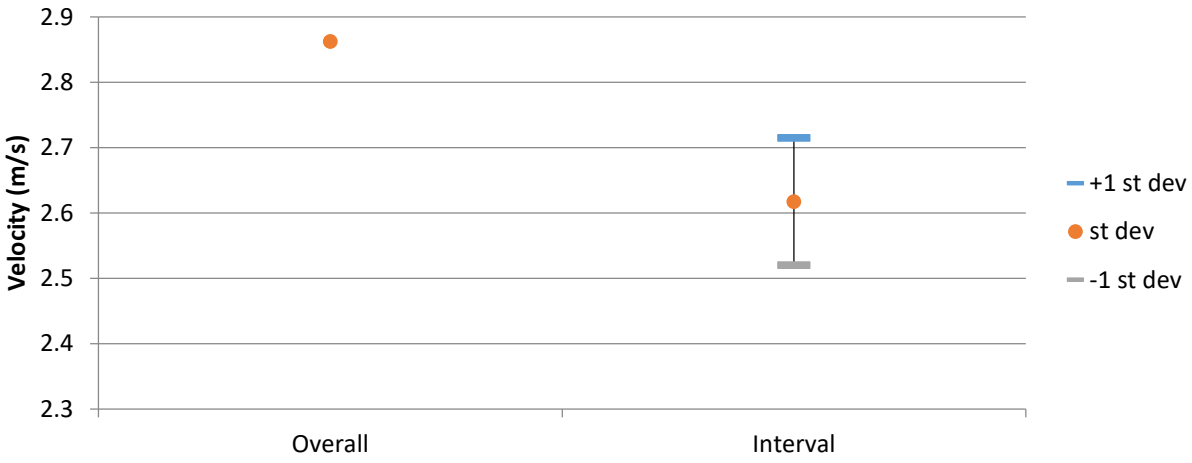


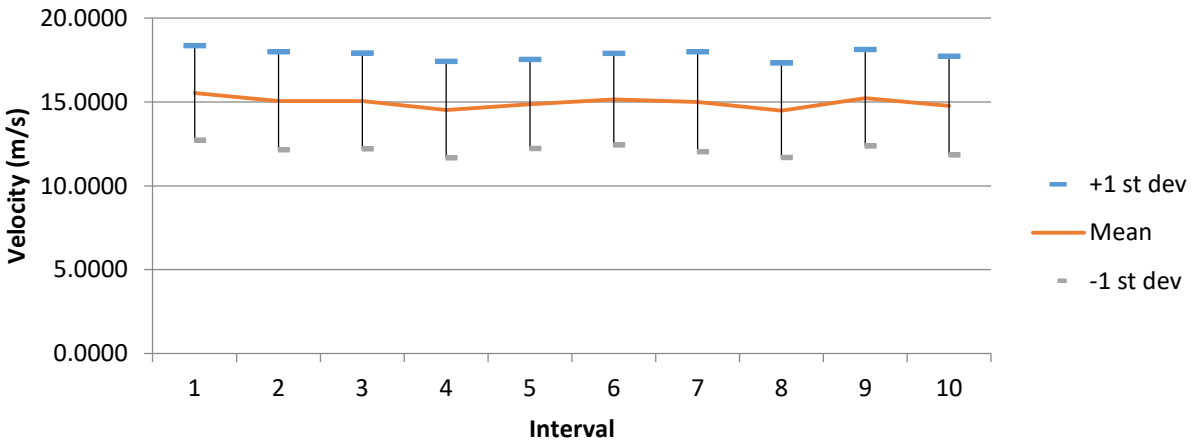
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 249
Blockage Condition: 2D at 1'
Blower Frequency: 50 Hz
Inlet Probe Location: E5
First Sample Date: 23-Aug-13
First Sample Time: 09:57:22.734

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	29.3658	1.0404	10.4944	4.0482
u	22.8000	0.7260	7.8527	3.0244
v	19.4000	-17.0000	-1.5554	5.7405
w	14.2000	-14.9000	0.7405	4.4486

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	22.3042	1.2777	11.7996	3.6540	30.9668	5285	42.28 %
2	25.7075	1.1316	7.8137	3.4305	43.9038	4905	39.24 %
3	29.3658	1.3603	11.1995	4.3453	38.7987	4227	33.82 %
4	29.3049	2.2740	13.9700	4.3120	30.8661	5257	42.06 %
5	25.5391	1.0404	10.3718	3.7680	36.3294	4464	35.71 %
6	23.0851	1.5636	10.7832	3.5775	33.1765	4984	39.87 %
7	25.5321	1.4952	12.2734	4.0899	33.3229	5447	43.58 %
8	25.1046	1.1686	9.2522	3.4249	37.0166	4369	34.95 %
9	23.3176	1.2835	9.4471	3.3946	35.9326	4850	38.80 %
10	22.0028	1.5516	9.3936	3.0817	32.8063	4423	35.38 %
		Average	10.6304	3.7078	35.3120		
		St dev	1.6851	0.3985	3.7913		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.2612	-7.0141	-3.5859	2.4859	2.8919	2.7818	30.0913	35.0063	33.6734
2	6.1400	-1.9059	1.6710	2.7204	3.3906	3.1318	44.3066	55.2209	51.0061
3	8.6270	1.5326	2.2263	3.3786	5.6961	4.3280	39.1631	66.0263	50.1682
4	10.2576	6.1811	2.9489	3.7092	4.6097	5.1619	36.1607	44.9389	50.3227
5	7.7435	-3.9400	-0.9826	2.7342	4.5621	4.1283	35.3099	58.9146	53.3124
6	7.6091	-4.8893	-2.0646	2.3872	4.2890	4.3506	31.3723	56.3669	57.1756
7	8.6378	-7.3716	-3.1976	2.8223	3.1320	3.2278	32.6737	36.2596	37.3687
8	7.2350	-0.0605	2.4670	2.7488	4.5354	3.2835	37.9923	62.6864	45.3833
9	7.1540	-0.3813	3.0597	2.7060	4.7493	3.1961	37.8245	66.3866	44.6755
10	7.4386	0.1743	2.7464	2.5584	4.4355	2.9360	34.3940	59.6280	39.4693

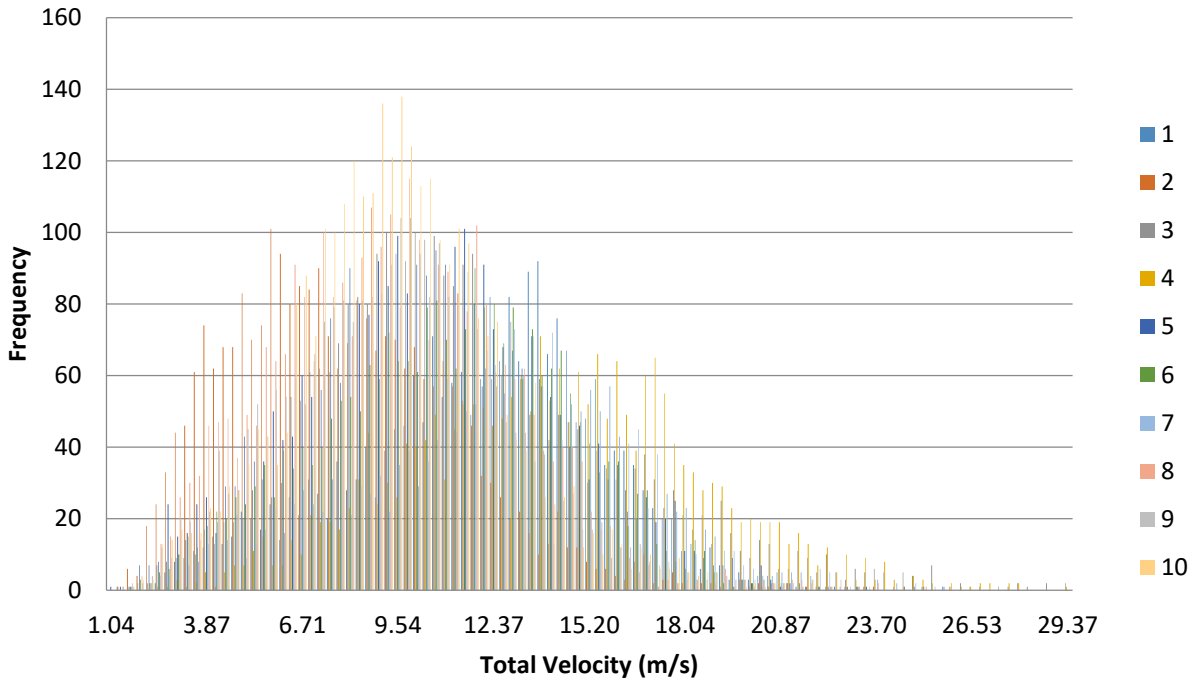


Figure 1. Velocity histogram for each interval (100 bins).

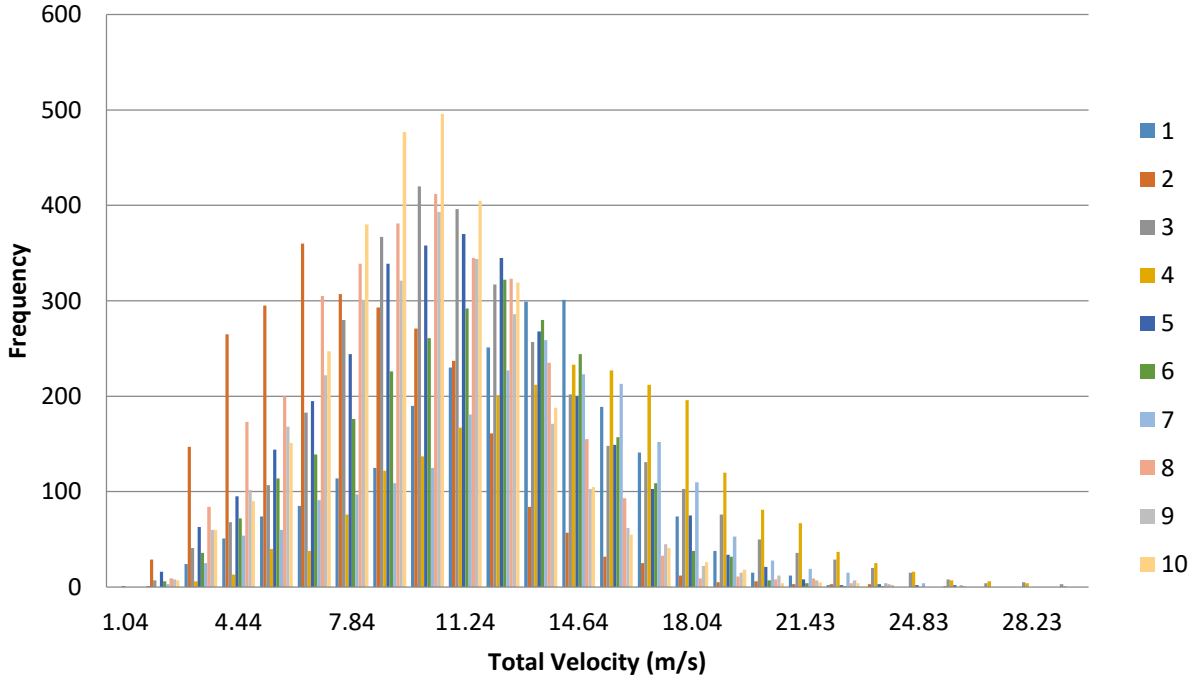
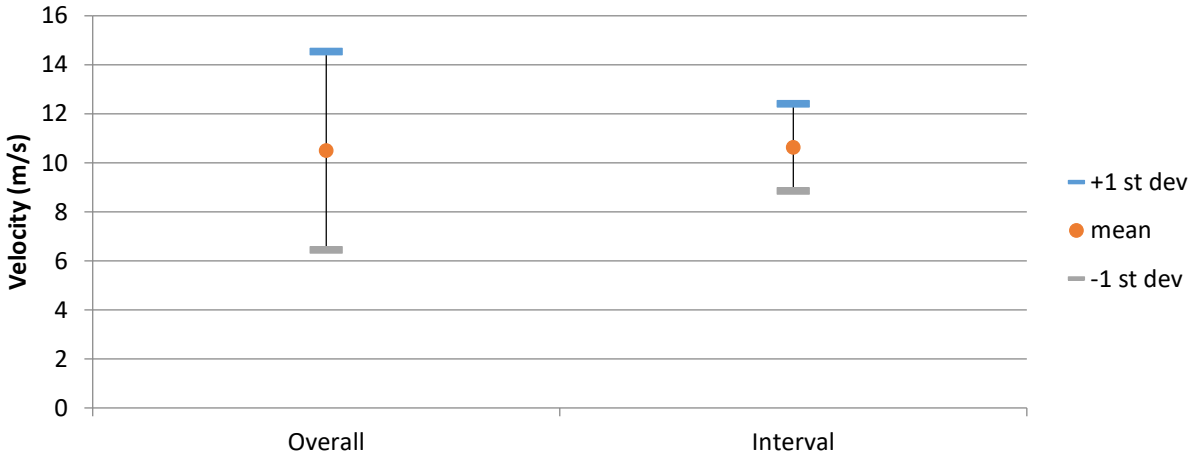
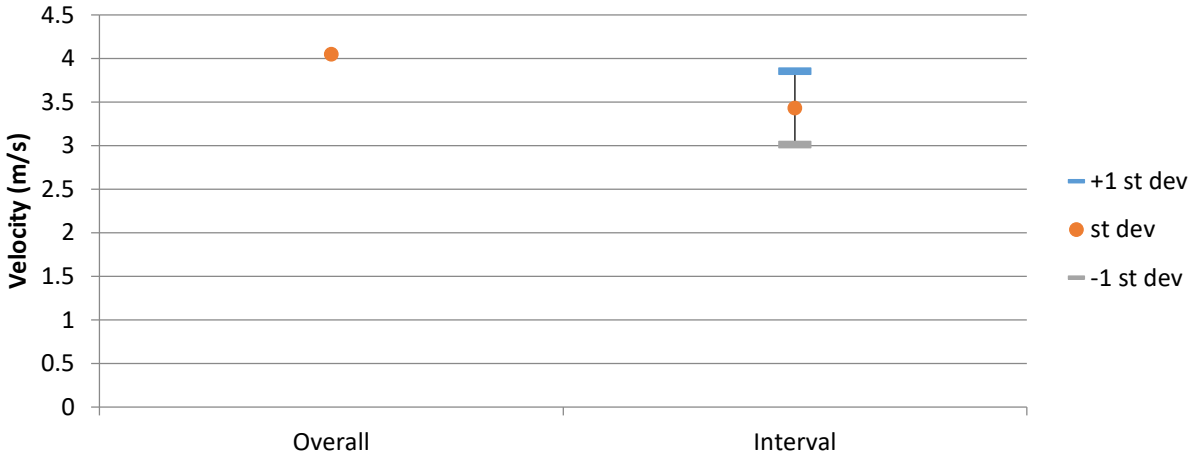


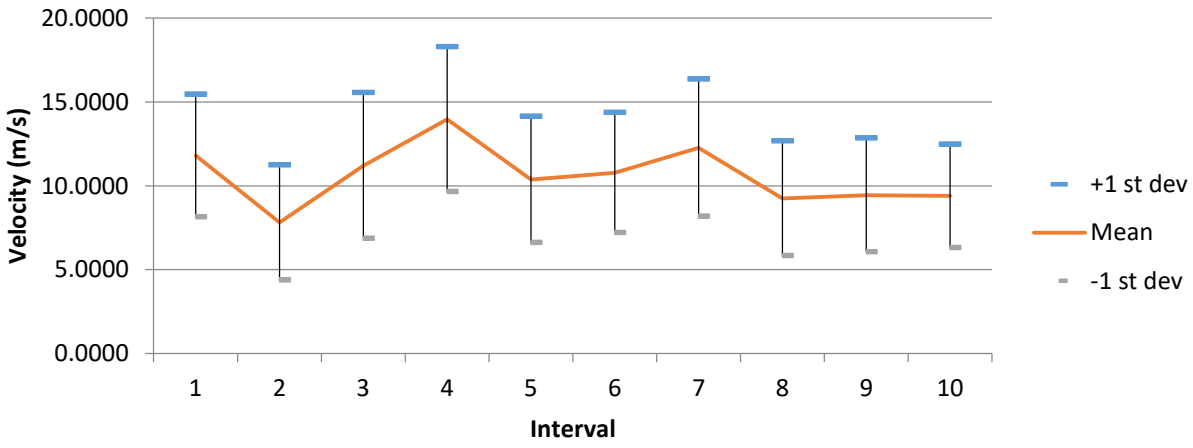
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 250
Blockage Condition: 2D at 1'
Blower Frequency: 50 Hz
Inlet Probe Location: A5
First Sample Date: 23-Aug-13
First Sample Time: 09:58:55.328

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	14.2055	4.9687	10.4250	0.4879
u	9.9900	3.2700	7.0985	0.3813
v	-3.5500	-10.4000	-7.5810	0.3417
w	2.7100	-3.4700	-0.1118	0.8857

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	11.3578	8.8996	10.5391	0.2865	2.7181	7261	58.09 %
2	12.0720	8.9803	10.3787	0.4165	4.0127	5806	46.45 %
3	12.0315	9.2173	10.6432	0.3456	3.2475	6395	51.16 %
4	14.2055	4.9687	10.5447	0.9388	8.9027	6893	55.14 %
5	12.5893	6.2499	10.5145	0.4843	4.6062	5328	42.62 %
6	11.7663	8.0285	10.2698	0.4638	4.5159	7135	57.08 %
7	11.8784	9.3254	10.4719	0.2808	2.6811	5782	46.26 %
8	11.3606	8.7784	9.9213	0.3583	3.6118	6731	53.85 %
9	11.5379	9.6268	10.5273	0.2960	2.8121	5009	40.07 %
10	11.6553	7.7964	10.0108	0.6672	6.6649	6661	53.29 %
		Average	10.3821	0.4538	4.3773		
		St dev	0.2300	0.1967	1.8937		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	7.1076	-7.7665	0.0465	0.2035	0.2193	0.4787	2.8636	3.0857	6.7351
2	7.0904	-7.5329	-0.4630	0.3425	0.2802	0.6798	4.8303	3.9513	9.5871
3	7.2526	-7.7539	0.3399	0.2818	0.2564	0.6421	3.8860	3.5354	8.8531
4	7.2107	-7.5425	-0.8449	0.7139	0.6151	1.2608	9.9011	8.5301	17.4846
5	7.2025	-7.5896	-0.7200	0.3897	0.3245	0.7316	5.4100	4.5058	10.1580
6	6.9378	-7.5204	-0.4301	0.3305	0.3058	0.7792	4.7640	4.4070	11.2307
7	7.1111	-7.6636	0.0434	0.2288	0.2022	0.5892	3.2180	2.8428	8.2854
8	6.7186	-7.2547	-0.4581	0.2701	0.2256	0.6757	4.0206	3.3585	10.0576
9	7.1383	-7.6849	0.6726	0.2362	0.2346	0.5791	3.3083	3.2862	8.1129
10	6.8329	-7.2517	-0.1277	0.5390	0.4711	0.9259	7.8889	6.8938	13.5510

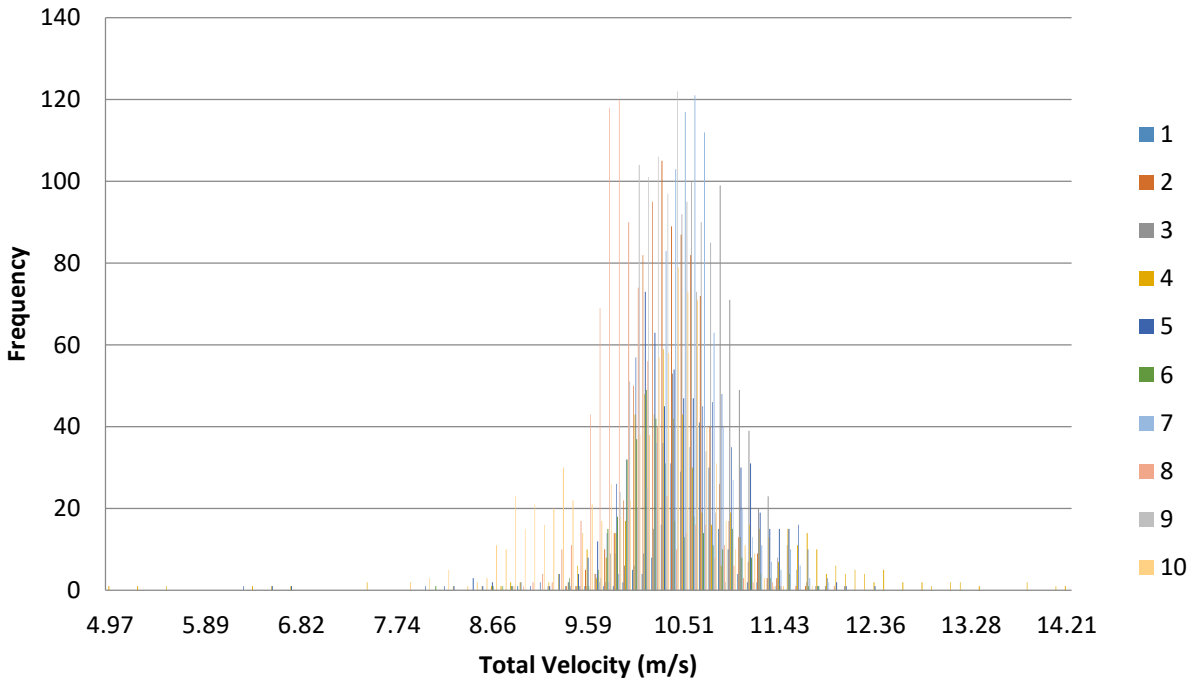


Figure 1. Velocity histogram for each interval (100 bins).

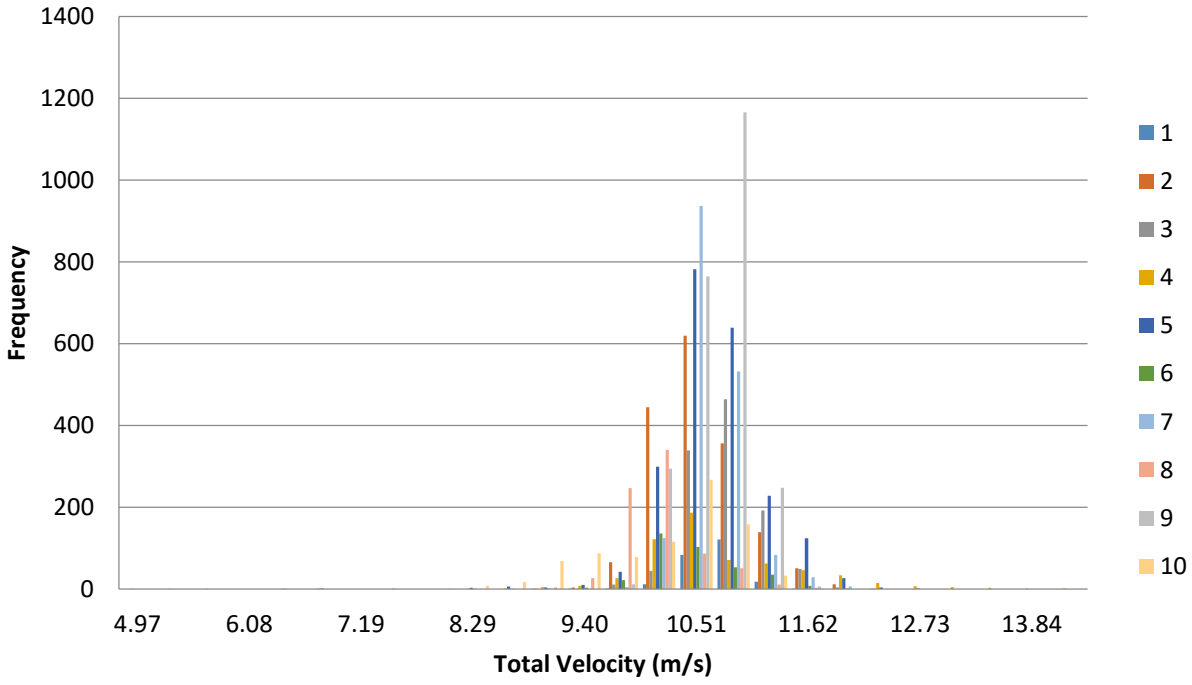
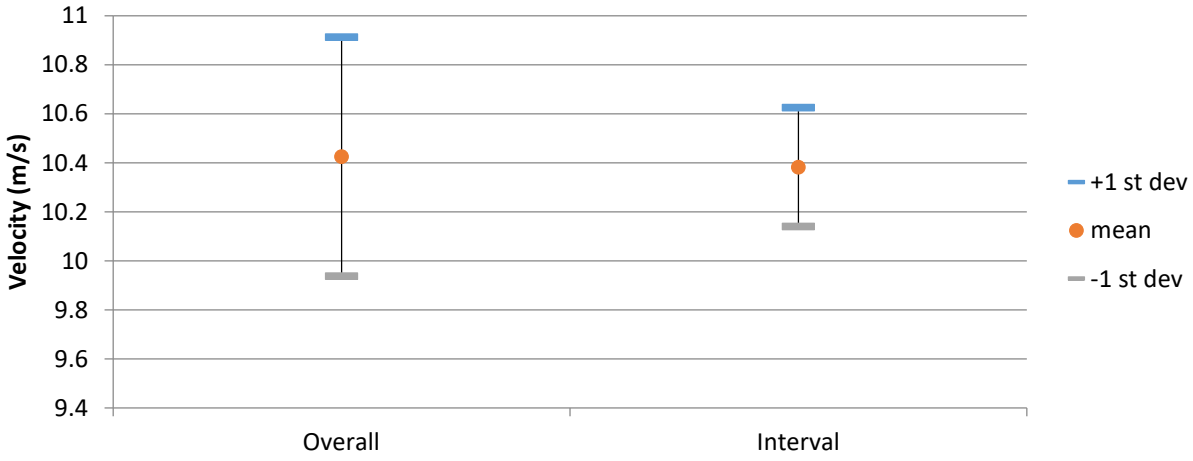
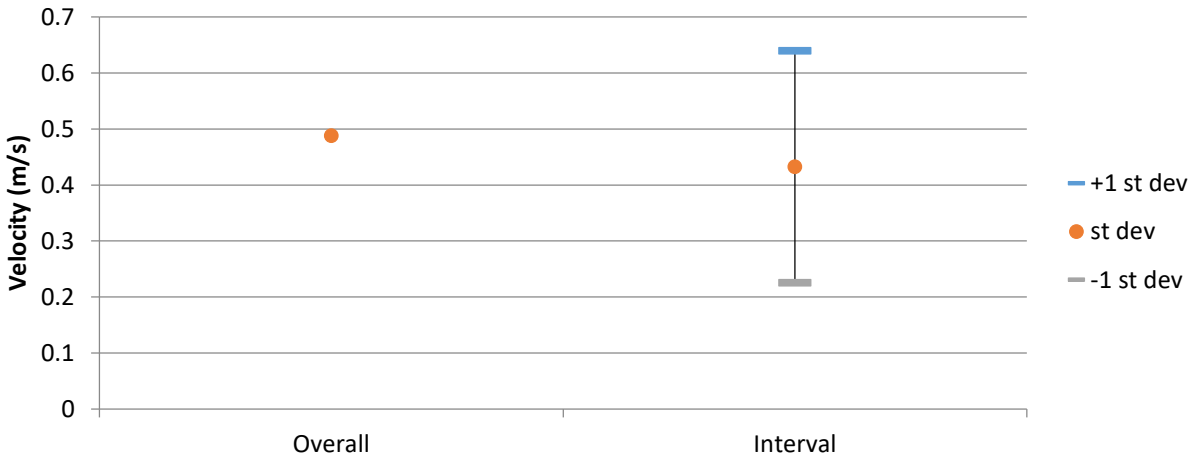


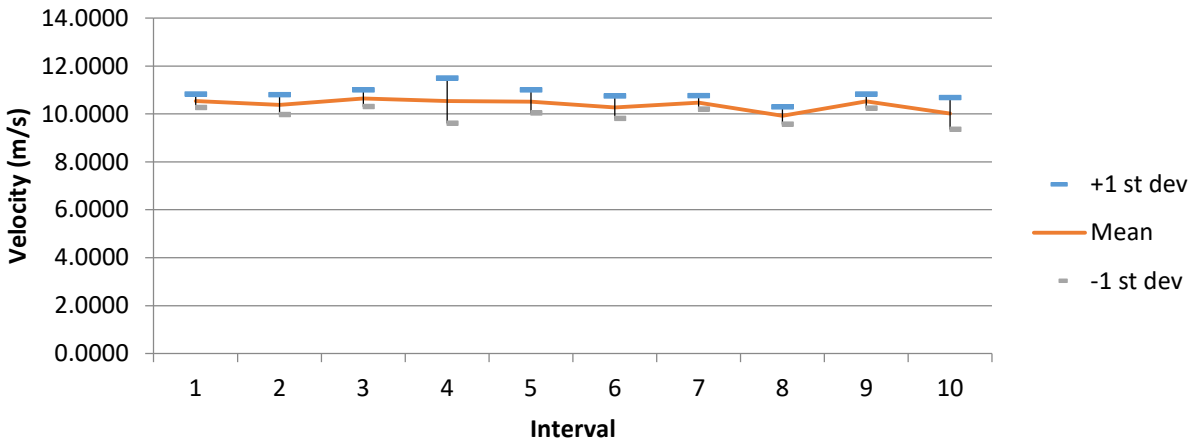
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 251
Blockage Condition: 2D at 1'
Blower Frequency: 50 Hz
Inlet Probe Location: A4
First Sample Date: 23-Aug-13
First Sample Time: 10:00:52.953

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	14.0026	7.1538	10.4252	0.6777
u	10.6000	4.6600	7.3542	0.6767
v	-4.3500	-9.7800	-7.2606	0.4242
w	2.3700	-6.6700	-1.0050	0.8338

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	13.9747	7.1615	10.1081	0.6241	6.1740	4717	37.74 %
2	11.5790	8.6454	9.6696	0.3668	3.7928	4172	33.38 %
3	13.9465	7.1538	9.8929	0.4639	4.6890	3333	26.66 %
4	13.3401	8.5384	10.7142	0.6631	6.1892	862	6.90 %
5	14.0026	9.0734	10.7982	0.5398	4.9988	263	2.10 %
6	13.7994	7.7138	10.6322	0.5004	4.7066	2414	19.31 %
7	11.8238	7.7685	10.3601	0.6415	6.1917	6027	48.22 %
8	11.9648	7.5958	10.4574	0.7072	6.7629	3893	31.14 %
9	12.0260	8.0827	10.6441	0.6344	5.9601	3823	30.58 %
10	11.3995	8.7401	10.0879	0.3959	3.9246	4900	39.20 %
		Average	10.3365	0.5537	5.3390		
		St dev	0.3617	0.1121	0.9945		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	7.1142	-7.0861	-0.6893	0.5510	0.4476	0.8716	7.7454	6.2912	12.2523
2	6.6996	-6.9292	-0.3334	0.3696	0.2925	0.6356	5.5166	4.3665	9.4866
3	6.8375	-7.0602	-0.7741	0.3804	0.4114	0.7568	5.5635	6.0172	11.0679
4	7.7888	-7.1938	-1.2707	0.7206	0.3919	0.7279	9.2521	5.0313	9.3451
5	7.8776	-7.2941	-0.7438	0.5742	0.3911	0.7723	7.2895	4.9648	9.8034
6	7.4004	-7.5162	-1.0645	0.4713	0.3078	0.7652	6.3692	4.1598	10.3405
7	7.0165	-7.4071	-1.7079	0.4710	0.4683	0.5363	6.7133	6.6742	7.6431
8	7.2211	-7.3346	-1.7488	0.5693	0.4732	0.5575	7.8843	6.5533	7.7209
9	7.4430	-7.4498	-1.2607	0.5716	0.4204	0.8413	7.6796	5.6486	11.3038
10	6.8721	-7.3177	-0.7129	0.2901	0.2701	0.6949	4.2209	3.9308	10.1126

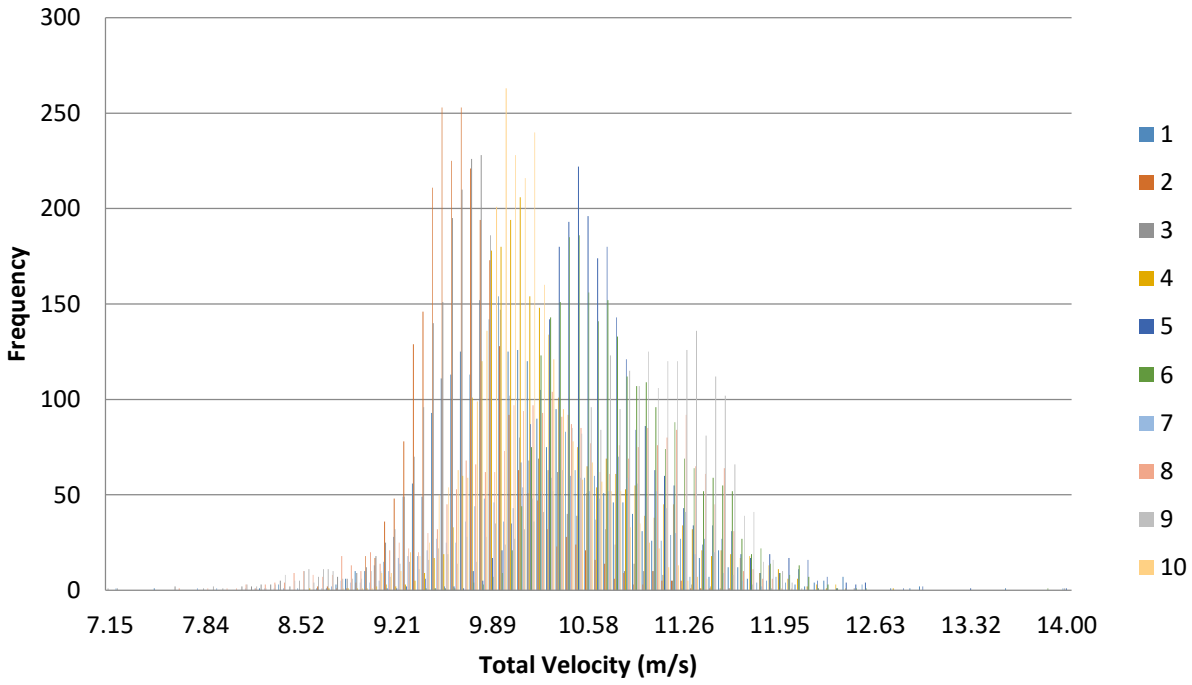


Figure 1. Velocity histogram for each interval (100 bins).

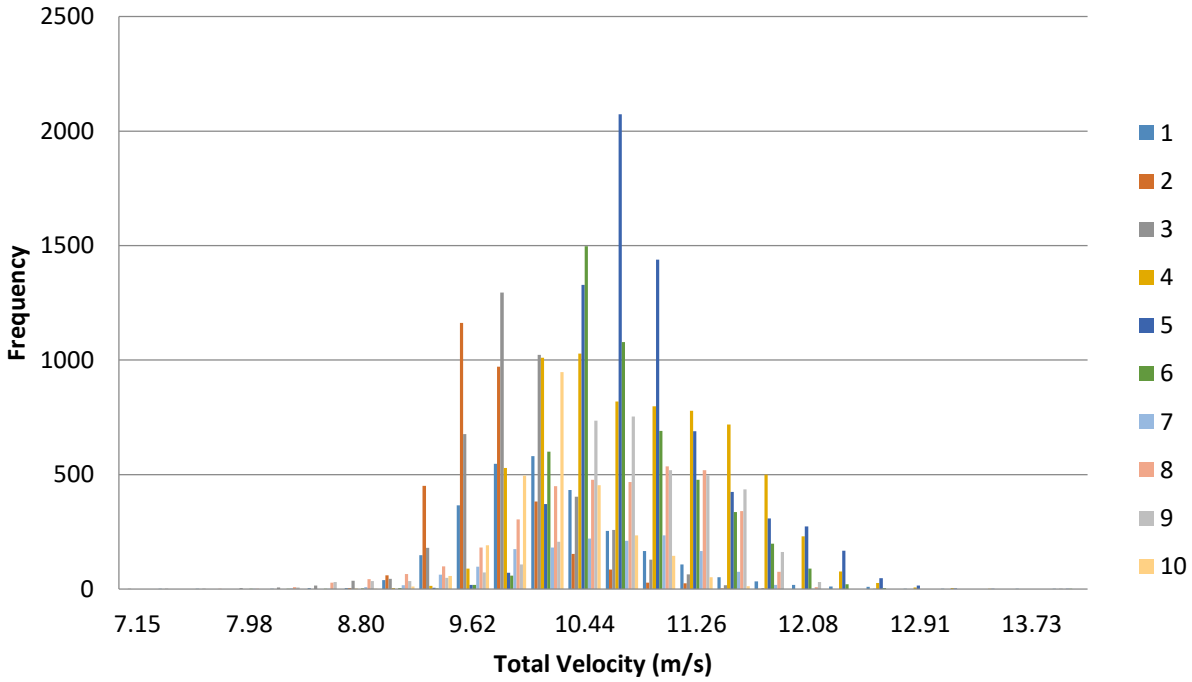
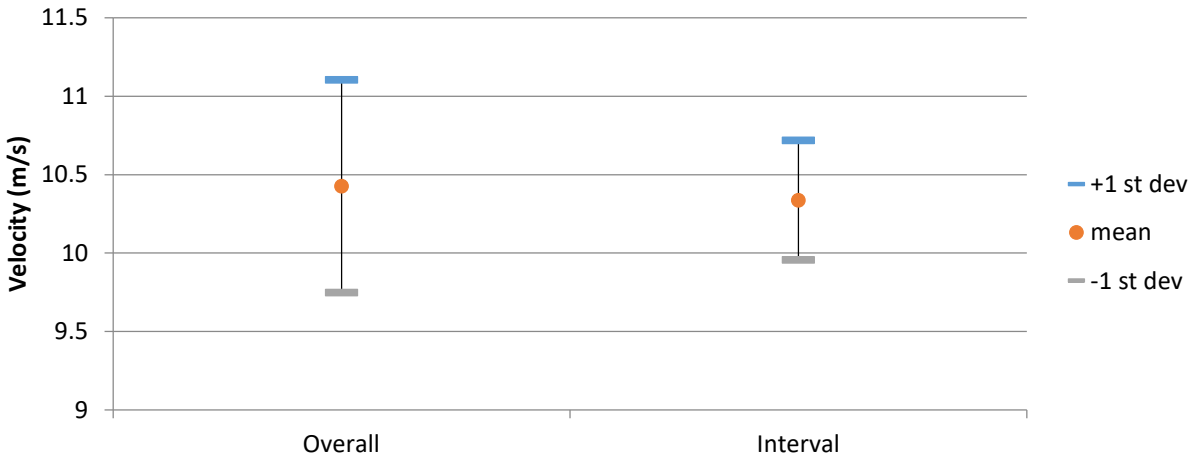
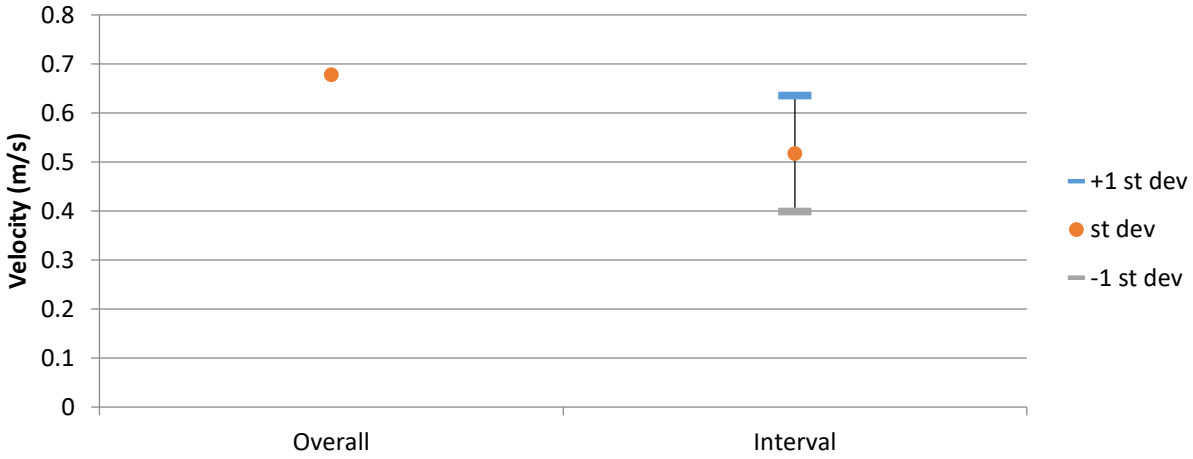


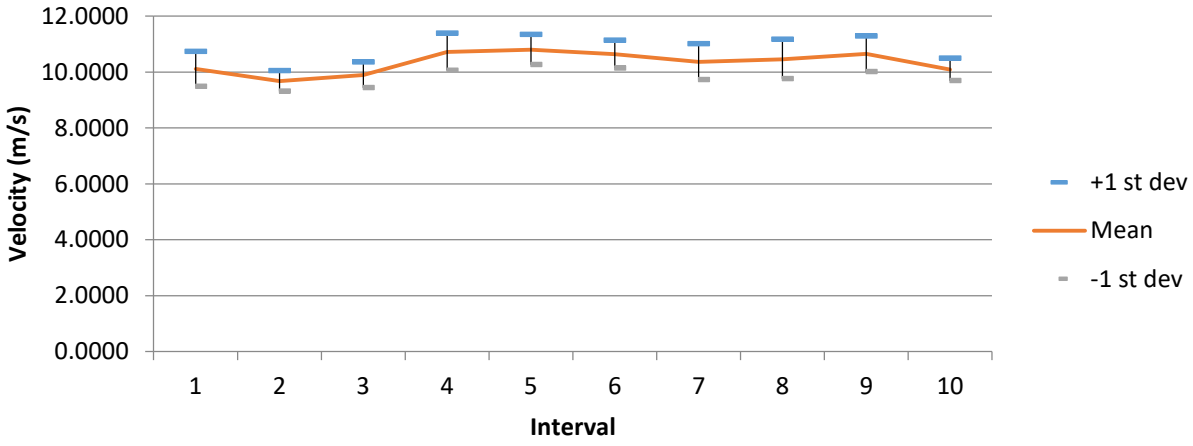
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 252
Blockage Condition: 2D at 1'
Blower Frequency: 50 Hz
Inlet Probe Location: A2
First Sample Date: 23-Aug-13
First Sample Time: 10:02:27.578

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.7208	8.6810	9.9837	0.6511
u	10.2000	5.5100	7.6524	0.8572
v	-3.9000	-7.7100	-5.5579	0.5326
w	-0.6670	-5.6200	-3.0391	0.6273

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	11.1637	9.0495	9.7493	0.2637	2.7048	0	0.00 %
2	11.8467	8.7999	10.1849	0.6714	6.5918	0	0.00 %
3	11.9055	8.7626	9.9867	0.6537	6.5460	0	0.00 %
4	11.8445	8.6810	9.8213	0.5871	5.9779	30	0.24 %
5	12.2259	8.9027	10.3974	0.7163	6.8889	0	0.00 %
6	11.5323	8.8204	9.9243	0.6107	6.1535	1	0.01 %
7	11.7290	8.8152	10.2358	0.6814	6.6566	11	0.09 %
8	12.1582	9.0106	10.2026	0.6451	6.3227	0	0.00 %
9	12.7208	8.8916	9.9161	0.6348	6.4013	329	2.63 %
10	10.8912	8.8391	9.4145	0.2013	2.1380	5	0.04 %
		Average	9.9833	0.5665	5.6382		
		St dev	0.2714	0.1710	1.6317		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	7.4698	-5.4388	-3.0616	0.3620	0.3721	0.3128	4.8462	4.9811	4.1879
2	8.0480	-5.5437	-2.8048	0.6993	0.4560	0.3413	8.6887	5.6663	4.2403
3	7.7403	-5.5036	-2.9986	0.7179	0.5193	0.4292	9.2743	6.7094	5.5454
4	7.3296	-5.6908	-3.1326	0.6730	0.4980	0.4246	9.1824	6.7940	5.7930
5	8.2771	-5.5593	-2.7841	0.8944	0.4605	0.6636	10.8059	5.5633	8.0175
6	7.7748	-5.3780	-2.8912	0.8018	0.3818	0.5898	10.3123	4.9112	7.5863
7	7.9813	-5.7065	-2.6754	0.9265	0.4894	0.8461	11.6087	6.1323	10.6005
8	8.0099	-5.3782	-3.1465	0.8011	0.6329	0.6953	10.0012	7.9015	8.6801
9	7.0354	-6.1654	-3.1499	0.8323	0.4681	0.6242	11.8297	6.6532	8.8723
10	6.8294	-5.2422	-3.7512	0.3718	0.4221	0.4054	5.4440	6.1804	5.9356

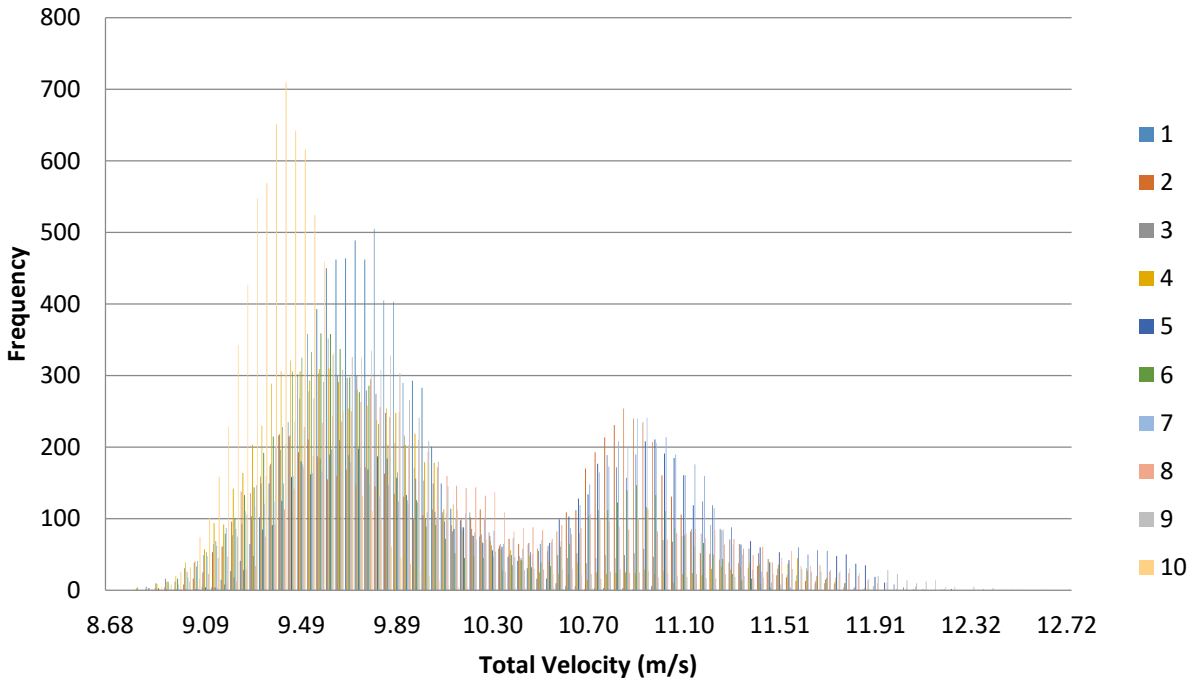


Figure 1. Velocity histogram for each interval (100 bins).

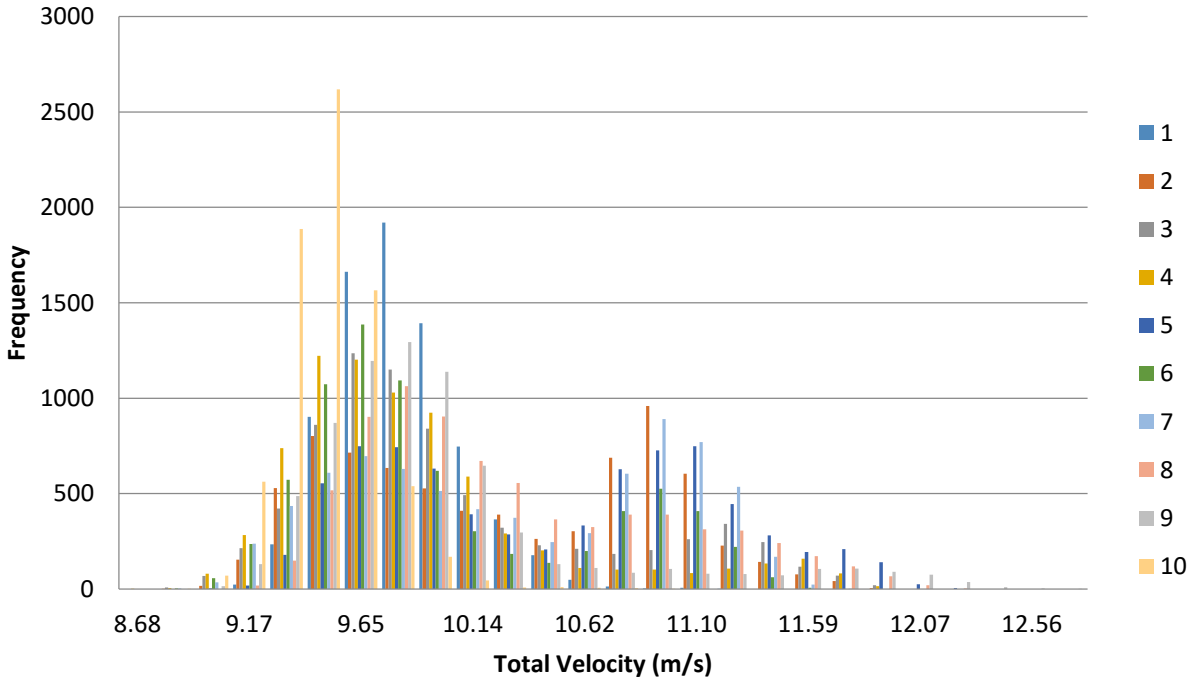
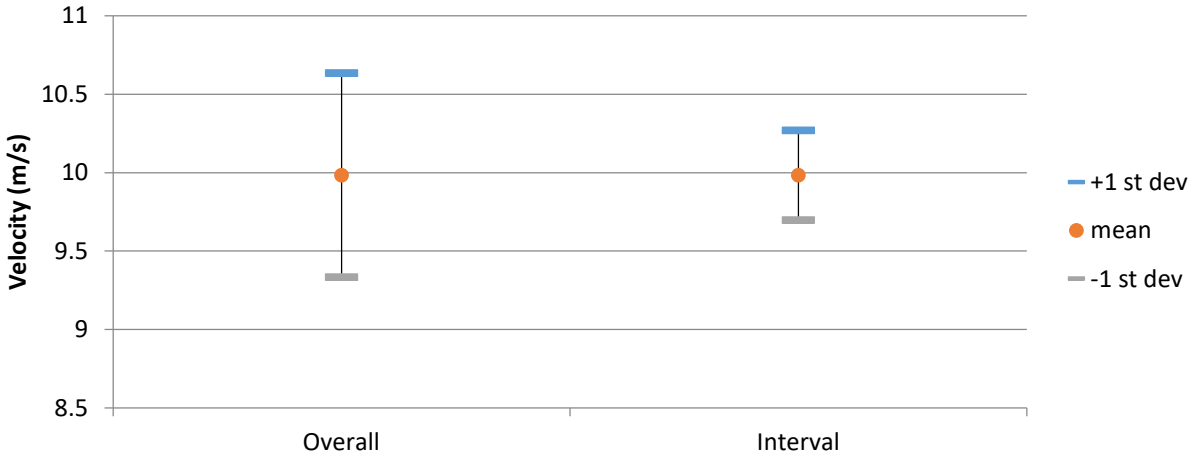
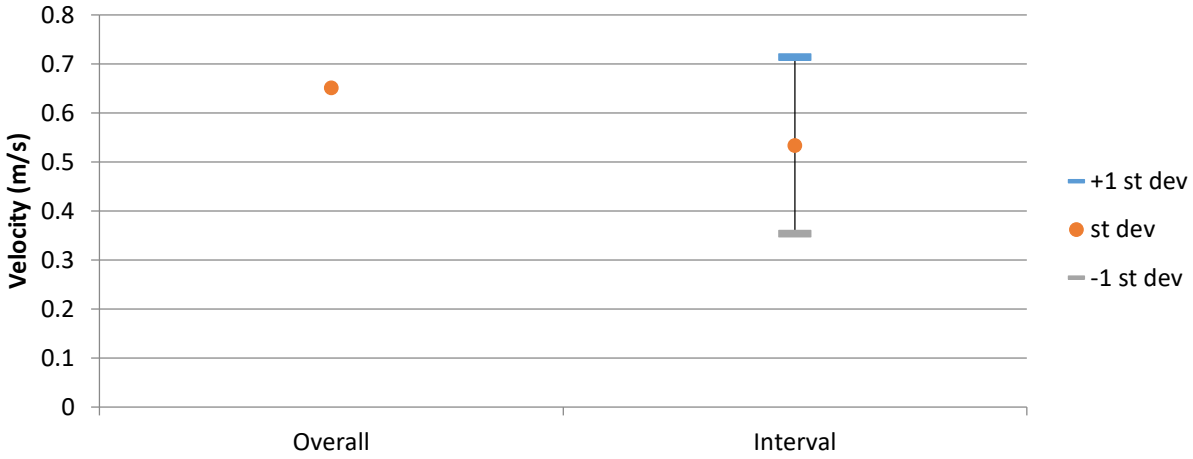


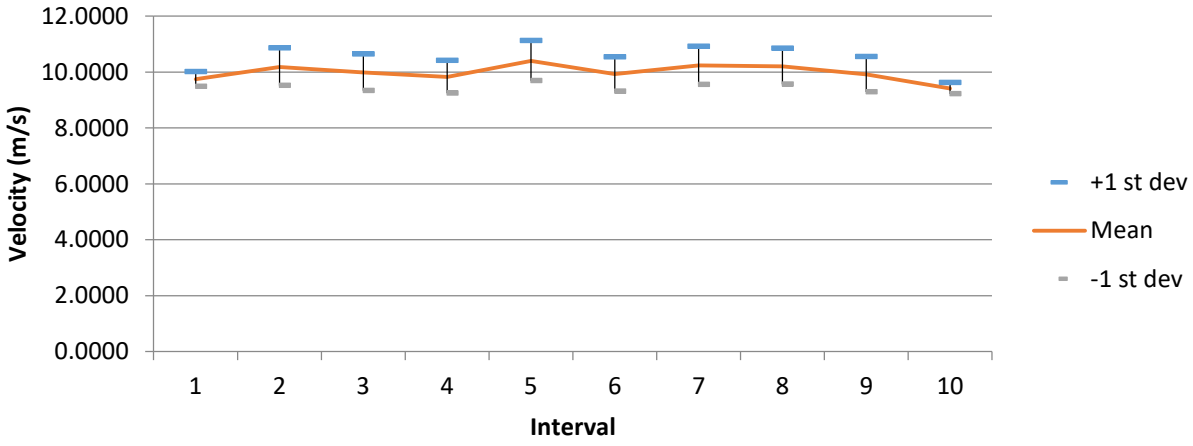
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 253
Blockage Condition: 2D at 1'
Blower Frequency: 50 Hz
Inlet Probe Location: A3
First Sample Date: 23-Aug-13
First Sample Time: 10:03:52.406

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	13.8076	5.1441	10.3710	0.7445
u	10.9000	3.7200	7.3058	0.7760
v	-3.5300	-9.7400	-6.8723	0.5118
w	2.1200	-5.2700	-2.4833	0.6922

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	12.4013	8.1253	10.2174	0.8111	7.9385	1163	9.30 %
2	12.7650	8.3187	10.2238	0.6944	6.7915	2425	19.40 %
3	12.8778	7.8495	10.1771	0.9592	9.4255	5546	44.37 %
4	9.9382	8.1108	9.1920	0.3955	4.3031	7404	59.23 %
5	10.1882	5.1441	9.4293	0.4368	4.6323	7088	56.70 %
6	13.0295	8.3881	10.8718	0.9287	8.5427	6990	55.92 %
7	13.8076	6.7521	10.7457	0.9048	8.4198	1048	8.38 %
8	13.3880	8.2340	10.4718	0.7228	6.9028	1547	12.38 %
9	12.3289	9.0374	10.4198	0.4658	4.4706	18	0.14 %
10	12.3663	8.5523	10.2268	0.5168	5.0534	337	2.70 %
		Average	10.1975	0.6836	6.6480		
		St dev	0.4983	0.2054	1.8177		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	7.3025	-6.5472	-2.6070	0.9589	0.5780	0.9004	13.1318	7.9154	12.3306
2	7.0615	-6.7586	-2.9054	0.7551	0.4278	0.5208	10.6928	6.0577	7.3749
3	7.0891	-6.9042	-2.1576	0.9871	0.5388	0.8068	13.9239	7.6003	11.3812
4	6.1462	-6.5562	-1.5412	0.2565	0.2651	1.1804	4.1739	4.3127	19.2050
5	5.9469	-6.2417	-3.7412	0.3080	0.3038	0.7717	5.1794	5.1093	12.9772
6	7.3624	-7.4211	-2.8696	0.8467	0.5545	0.7233	11.5000	7.5318	9.8244
7	7.8011	-7.0319	-2.0535	0.7882	0.6617	0.8417	10.1040	8.4826	10.7896
8	7.2634	-7.2146	-2.1157	0.6658	0.4306	0.5188	9.1660	5.9282	7.1421
9	7.4331	-6.8137	-2.5991	0.4683	0.2972	0.2203	6.2997	3.9990	2.9638
10	7.0870	-6.8663	-2.6483	0.5651	0.2639	0.2826	7.9741	3.7232	3.9872

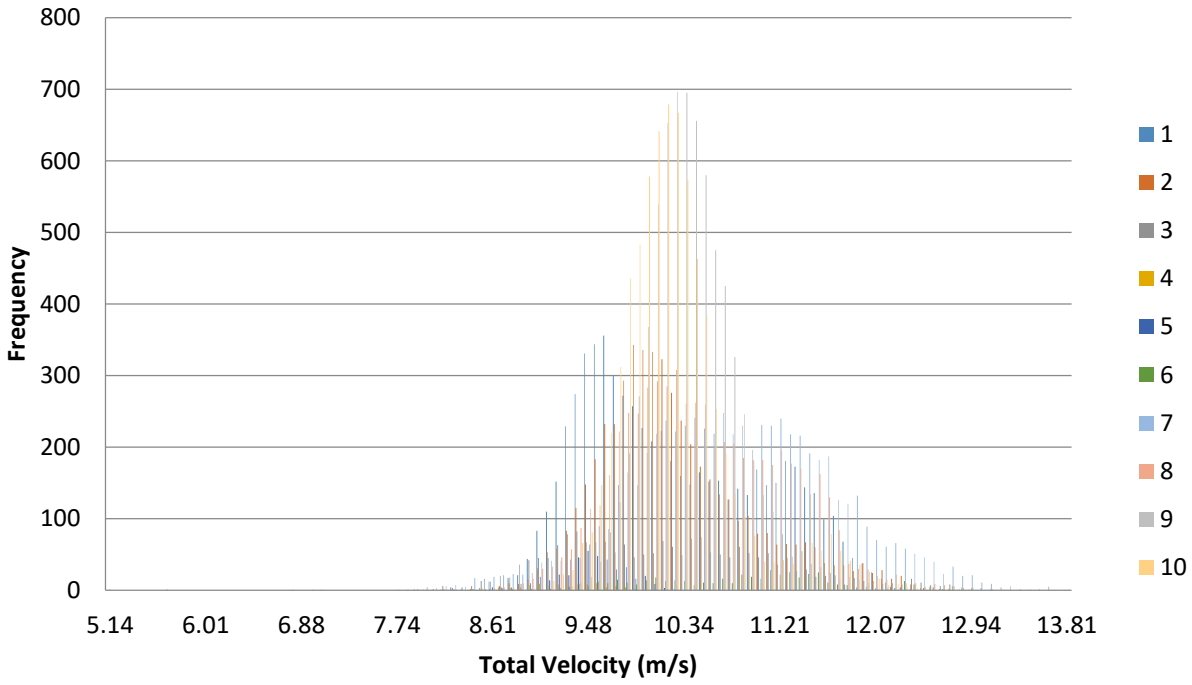


Figure 1. Velocity histogram for each interval (100 bins).

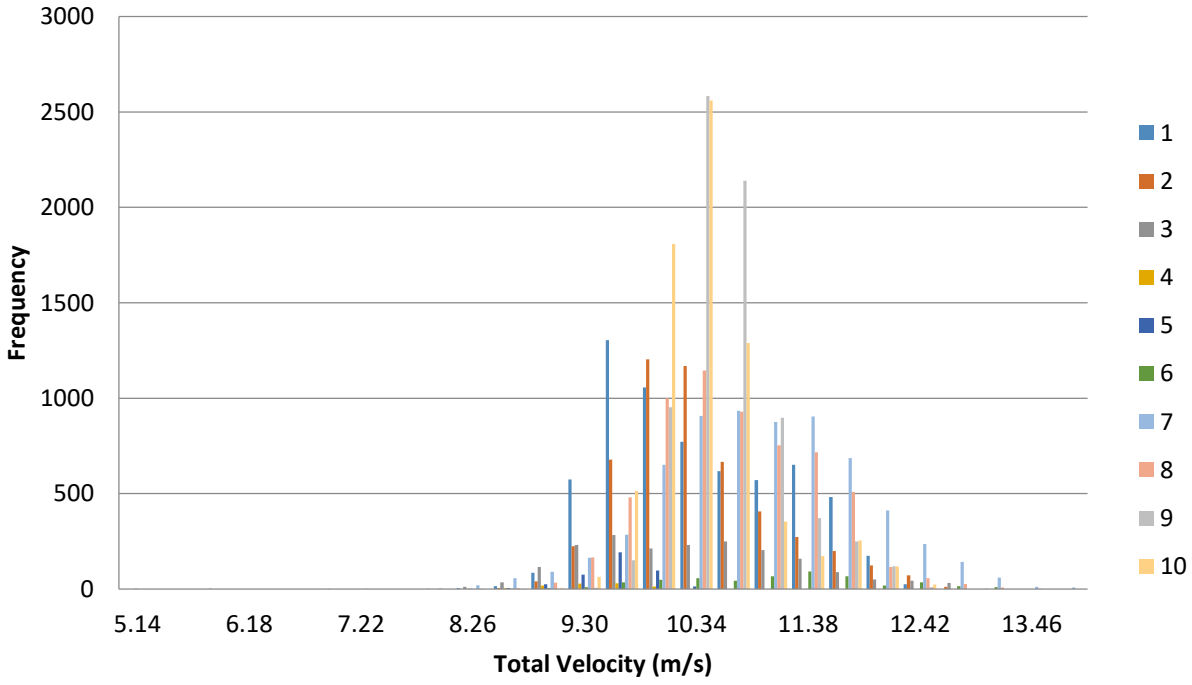
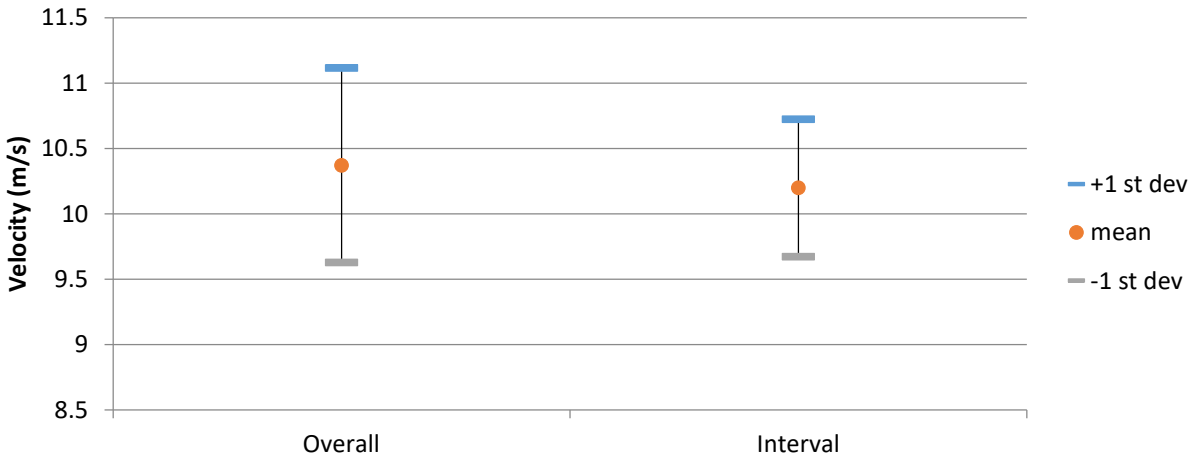
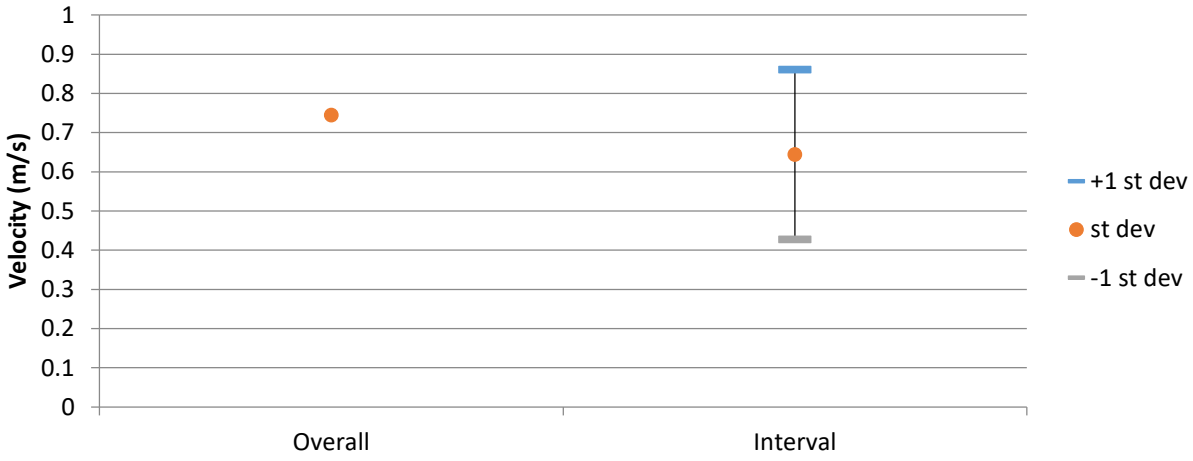


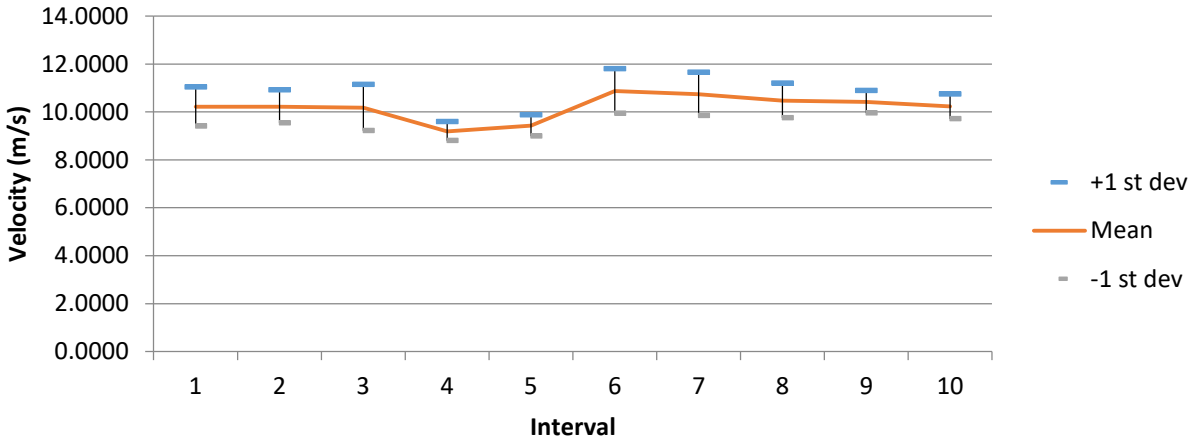
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 254
Blockage Condition: 2D at 1'
Blower Frequency: 50 Hz
Inlet Probe Location: C3
First Sample Date: 23-Aug-13
First Sample Time: 10:05:32.078

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	14.5303	9.8705	11.3591	0.5415
u	11.9000	7.2000	9.5235	0.5770
v	-1.6400	-9.4400	-4.4226	0.9389
w	0.6650	-6.4700	-4.1543	0.7702

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	12.3435	9.9453	11.2075	0.3291	3.5613
2	12.8969	10.0683	11.5580	0.4116	2.7688
3	12.3855	10.2471	11.2870	0.3125	3.4653
4	12.5605	9.8964	11.2616	0.3903	5.2647
5	14.5303	10.5583	12.2235	0.6435	4.8656
6	14.4033	10.2428	11.6368	0.5662	2.4418
7	12.2223	10.0254	11.2389	0.2744	3.4774
8	12.0991	9.8705	11.0028	0.3826	3.0276
9	12.3895	9.9268	10.9301	0.3309	2.7979
10	12.2514	9.9866	11.2448	0.3146	3.4825
		Average	11.3591	0.3956	3.5153
		St Dev	0.3712	0.1192	0.8575

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.3525	-3.7661	-4.8524	0.3516	0.5117	0.3663	3.7590	5.4711	3.9168
2	9.9061	-4.1088	-4.2371	0.4247	0.6818	0.3794	4.2871	6.8825	3.8300
3	9.8354	-3.6371	-4.1048	0.3262	0.5434	0.5283	3.3164	5.5245	5.3714
4	8.8131	-4.8464	-4.9238	0.7321	0.6769	0.7626	8.3071	7.6802	8.6526
5	9.9615	-6.0691	-3.4771	0.6722	0.6536	0.8901	6.7476	6.5610	8.9354
6	9.9263	-4.9828	-3.2186	0.4643	0.8561	1.0342	4.6777	8.6244	10.4191
7	9.4613	-4.4828	-4.0713	0.2730	0.2274	0.2723	2.8850	2.4030	2.8783
8	9.4287	-3.9739	-4.0027	0.3057	0.5713	0.2748	3.2418	6.0587	2.9149
9	9.4740	-3.5815	-4.0792	0.2546	0.4939	0.2130	2.6878	5.2132	2.2487
10	9.0762	-4.7780	-4.5760	0.3681	0.4053	0.3159	4.0561	4.4655	3.4810

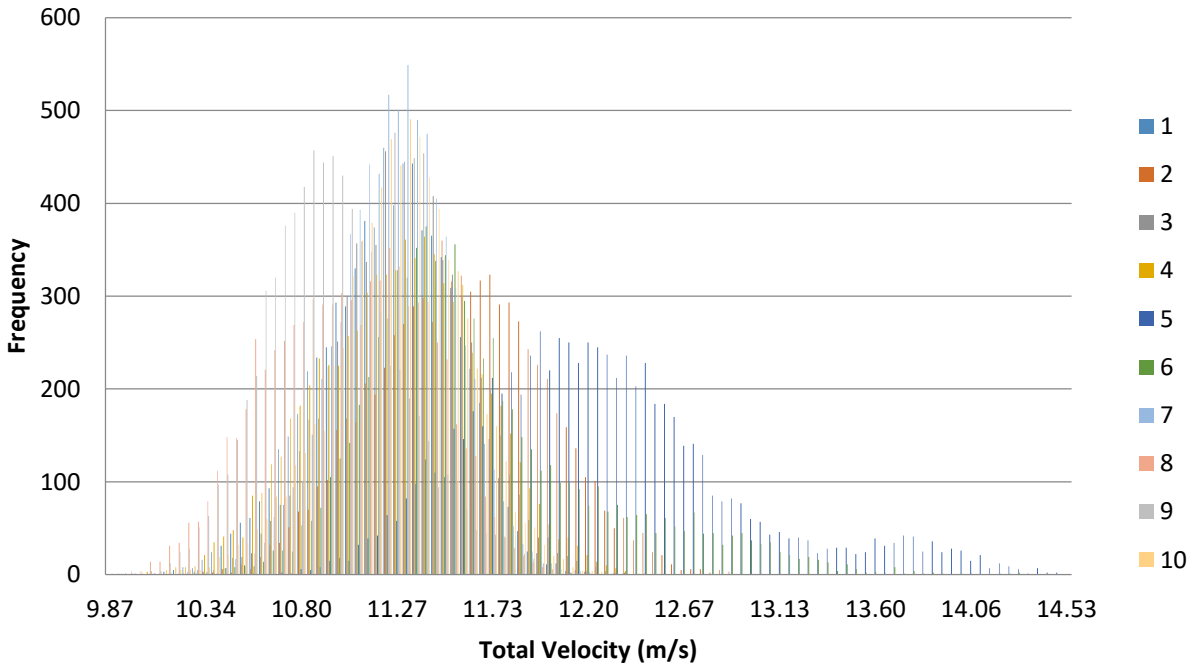


Figure 1. Velocity histogram for each interval (100 bins).

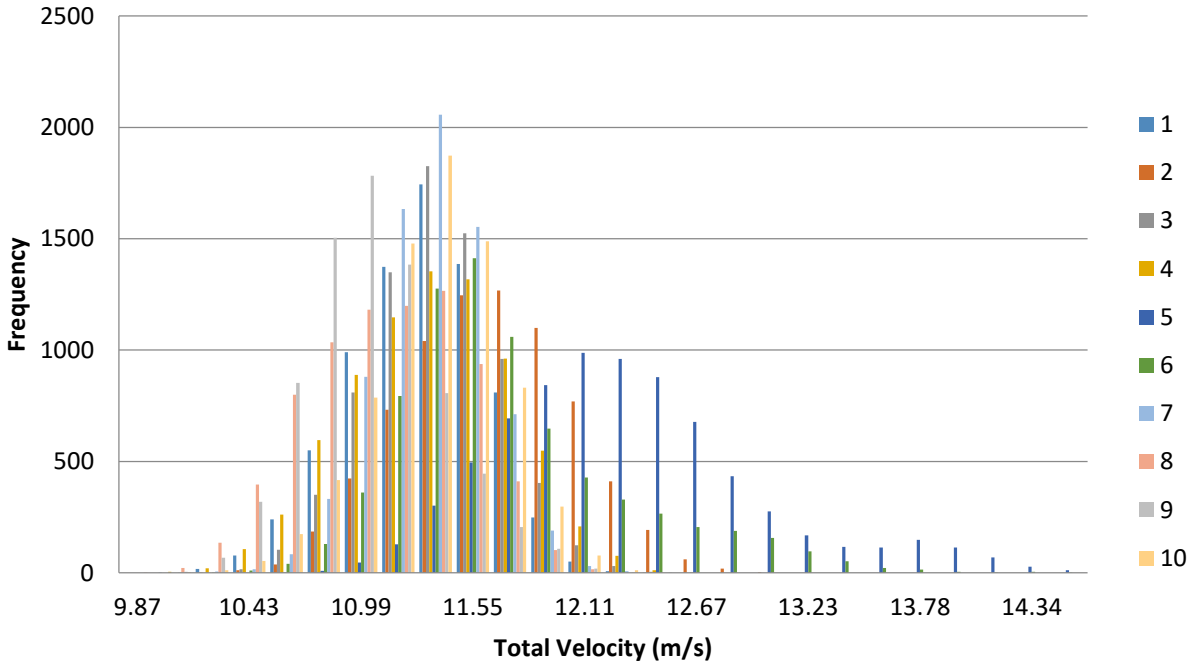
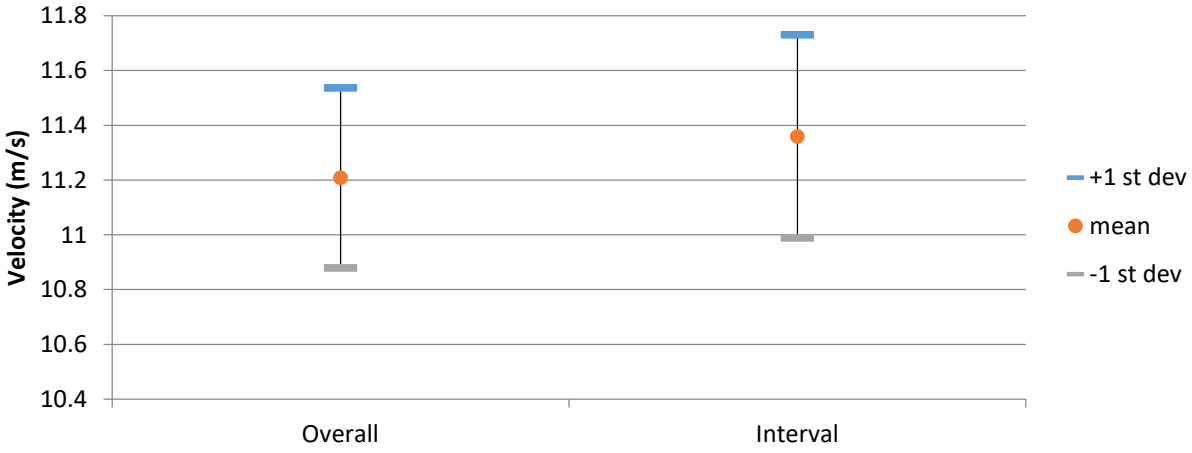
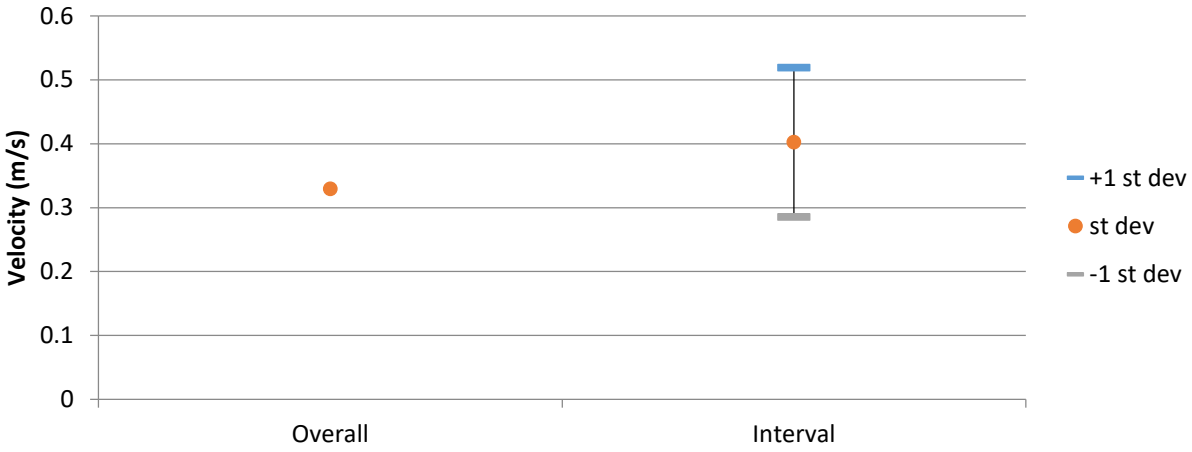


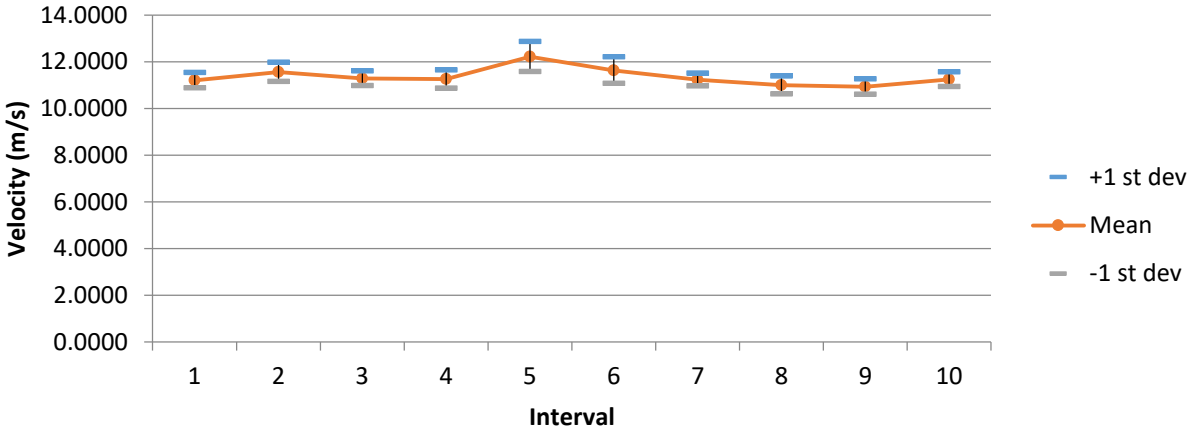
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 255
Blockage Condition: 2D at 2'
Blower Frequency: 50 Hz
Inlet Probe Location: C3
First Sample Date: 23-Aug-13
First Sample Time: 10:13:58.656

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.5930	9.2694	10.4729	0.2979
u	10.0000	7.8500	9.0105	0.2888
v	-3.1300	-5.5400	-4.5360	0.3173
w	-1.5300	-3.9400	-2.7824	0.2855

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.2968	9.3426	10.3233	0.2511	2.3890
2	11.3455	9.3837	10.4307	0.2492	3.1375
3	11.5113	9.2694	10.3286	0.3241	2.4581
4	11.3066	9.3105	10.3594	0.2546	2.5973
5	11.3453	9.3688	10.3688	0.2693	2.4910
6	11.3993	9.5401	10.4636	0.2607	2.4932
7	11.5930	9.3540	10.5006	0.2618	2.4610
8	11.4764	9.5395	10.4912	0.2582	2.3241
9	11.5204	9.7634	10.7123	0.2490	2.0873
10	11.5013	9.8540	10.7509	0.2244	2.4848
		Average	10.4729	0.2602	2.4923
		St Dev	0.1507	0.0254	0.2515

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	8.8816	-4.3485	-2.9536	0.2379	0.1841	0.1682	2.6780	2.0728	1.8942
2	8.9689	-4.6086	-2.6452	0.2492	0.2694	0.2204	2.7788	3.0043	2.4578
3	8.8802	-4.2976	-3.0039	0.2973	0.4203	0.4132	3.3483	4.7329	4.6529
4	9.0061	-4.2168	-2.8817	0.2674	0.2218	0.2573	2.9687	2.4631	2.8571
5	8.9251	-4.4275	-2.8385	0.2450	0.3375	0.3079	2.7451	3.7810	3.4495
6	8.9286	-4.7128	-2.7377	0.2344	0.2114	0.1712	2.6254	2.3673	1.9173
7	9.0637	-4.5902	-2.6261	0.2802	0.2037	0.3060	3.0917	2.2472	3.3756
8	8.9261	-4.7311	-2.8142	0.2608	0.2164	0.1959	2.9223	2.4247	2.1943
9	9.2046	-4.7644	-2.6897	0.2400	0.2046	0.2391	2.6074	2.2225	2.5976
10	9.3200	-4.6624	-2.6330	0.2085	0.1860	0.1410	2.2375	1.9961	1.5126

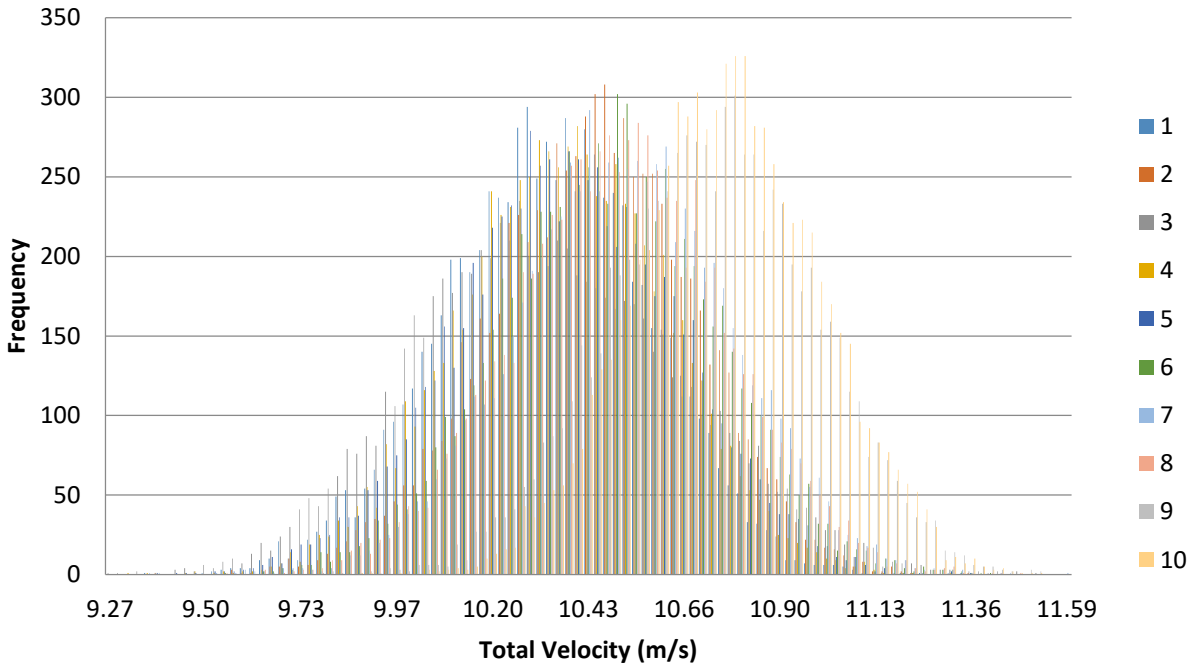


Figure 1. Velocity histogram for each interval (100 bins).

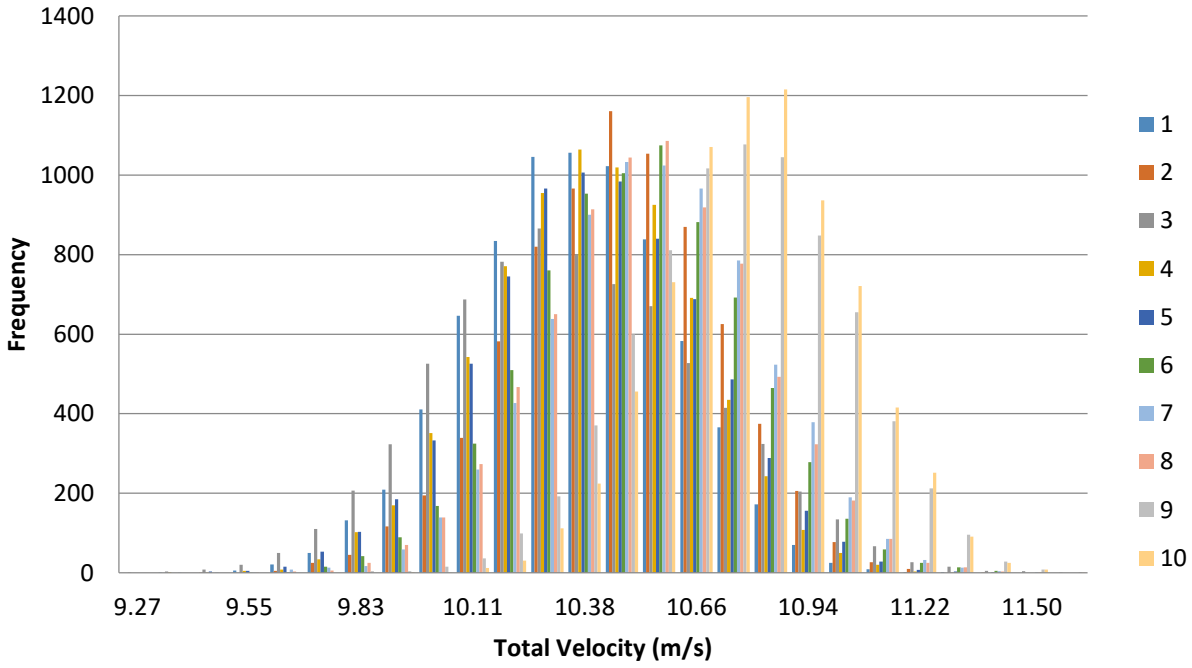
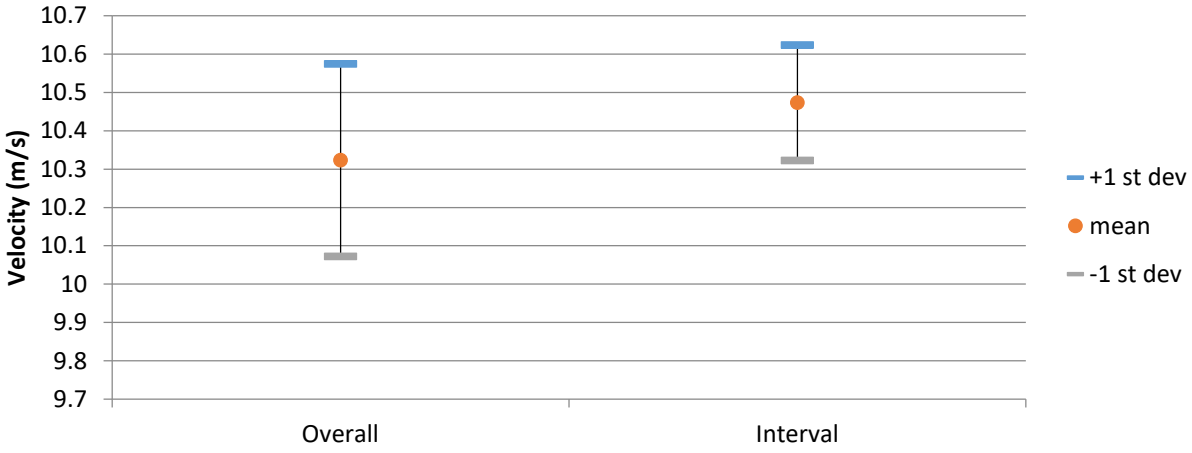
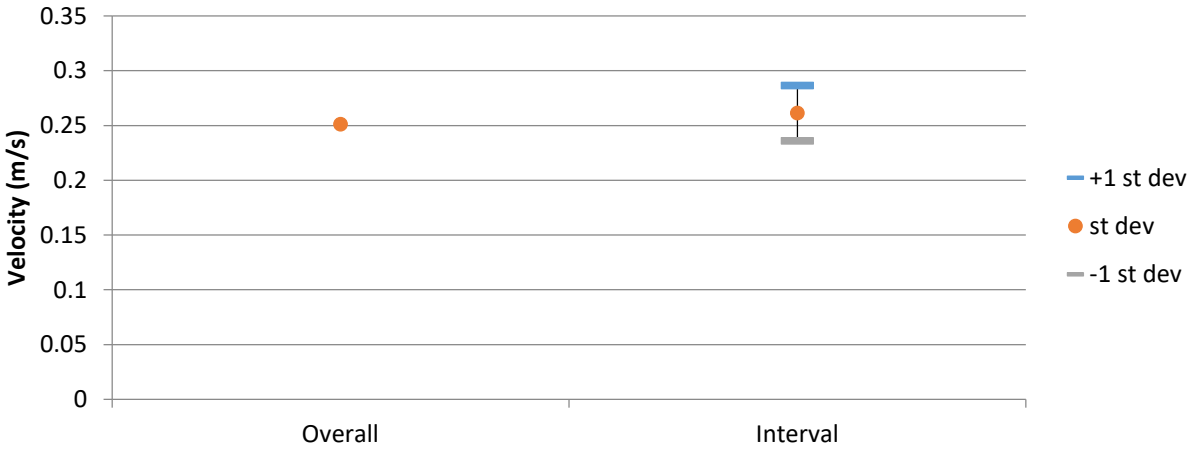


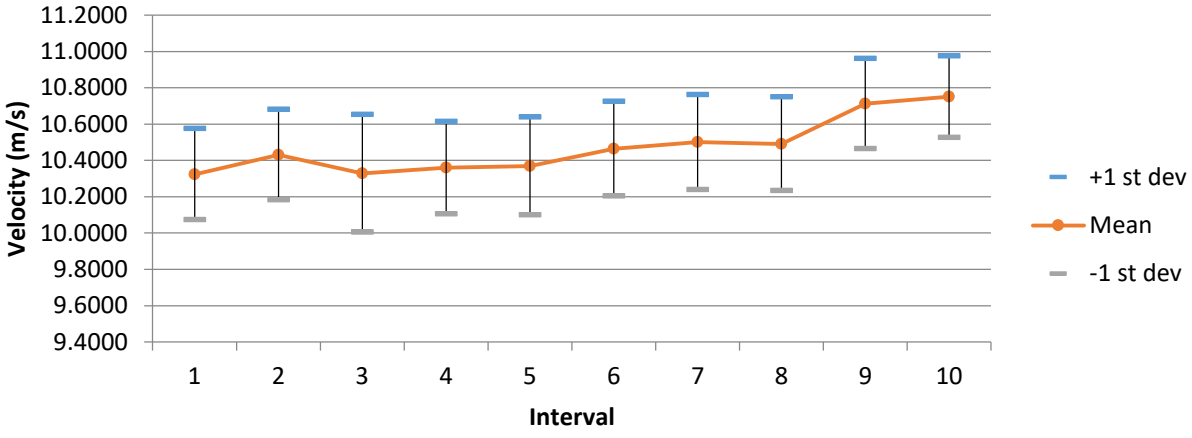
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 256
Blockage Condition: 2D at 2'
Blower Frequency: 50 Hz
Inlet Probe Location: A3
First Sample Date: 23-Aug-13
First Sample Time: 10:15:54.734

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.8485	7.6376	10.1586	0.5158
u	8.6200	5.2600	7.3285	0.4546
v	-5.3500	-7.9700	-6.7924	0.3095
w	-0.2110	-3.0200	-1.7724	0.4187

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	11.2748	7.8463	9.8768	0.5334	5.4001	139	1.11 %
2	11.5264	8.6612	10.2453	0.4305	4.2021	0	0.00 %
3	11.7400	7.9681	10.3899	0.4777	4.5979	5	0.04 %
4	11.8485	7.7948	10.2791	0.5292	5.1486	61	0.49 %
5	11.6578	8.5440	10.4599	0.4432	4.2375	1	0.01 %
6	11.3324	8.3400	9.9805	0.4678	4.6870	240	1.92 %
7	11.3443	8.5053	10.0250	0.4886	4.8739	0	0.00 %
8	11.4701	8.5280	10.0624	0.4991	4.9599	0	0.00 %
9	11.4172	7.6376	10.2826	0.4643	4.5156	0	0.00 %
10	11.2679	8.5792	9.9751	0.4602	4.6132	0	0.00 %
		Average	10.1577	0.4794	4.7236		
		St dev	0.1880	0.0321	0.3602		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	7.0092	-6.6724	-1.9272	0.5075	0.3170	0.3362	7.2407	4.5231	4.7971
2	7.3087	-6.9373	-1.8243	0.3449	0.2690	0.2994	4.7197	3.6809	4.0970
3	7.4424	-6.9666	-1.9743	0.4148	0.2803	0.3249	5.5733	3.7666	4.3661
4	7.3220	-6.9100	-2.0391	0.4946	0.3034	0.2929	6.7545	4.1437	4.0008
5	7.5895	-6.9157	-1.9620	0.3743	0.2574	0.3489	4.9324	3.3913	4.5974
6	7.0803	-6.8832	-1.3988	0.4048	0.2825	0.3483	5.7178	3.9904	4.9190
7	7.3329	-6.6614	-1.4857	0.4157	0.2704	0.3751	5.6693	3.6868	5.1157
8	7.2998	-6.7156	-1.6234	0.4329	0.2764	0.4635	5.9301	3.7869	6.3496
9	7.5591	-6.6828	-1.9429	0.4075	0.2636	0.3694	5.3910	3.4873	4.8867
10	7.3276	-6.5812	-1.5393	0.3848	0.2584	0.3527	5.2519	3.5261	4.8134

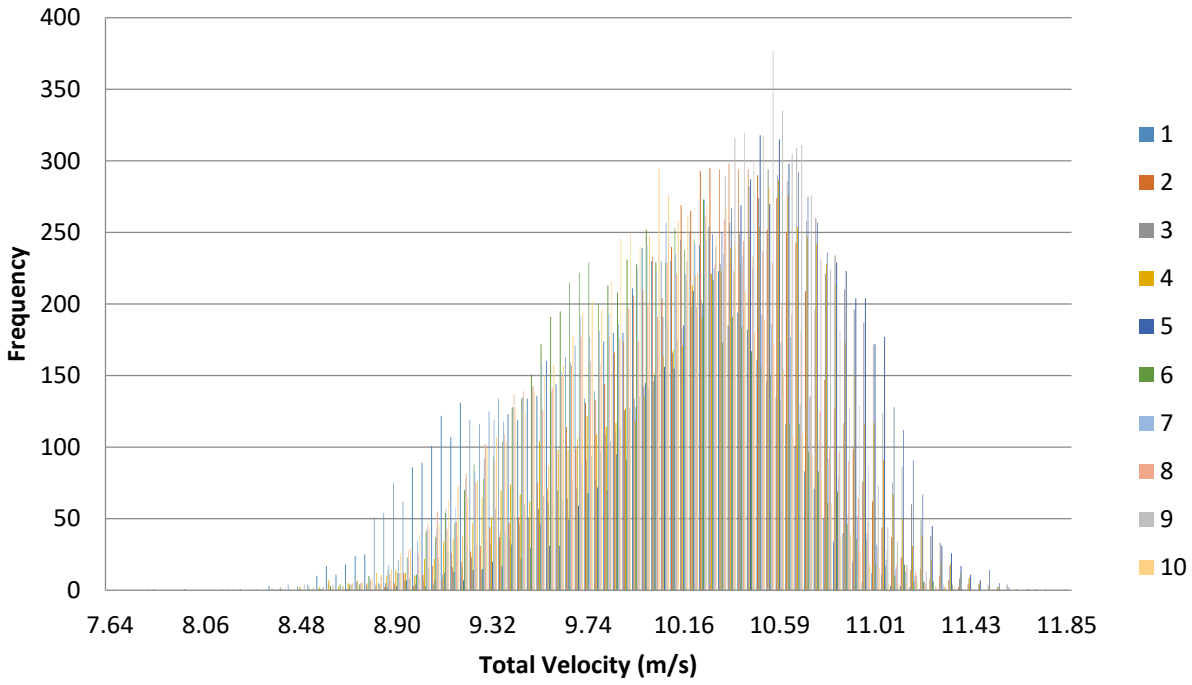


Figure 1. Velocity histogram for each interval (100 bins).

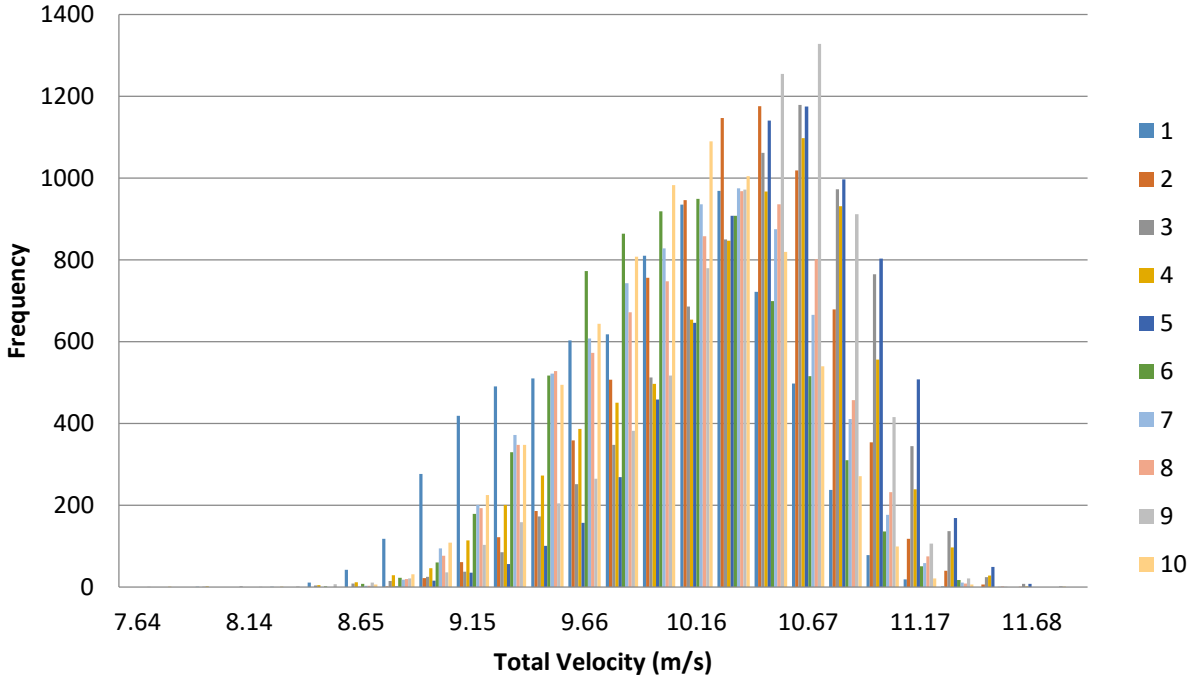
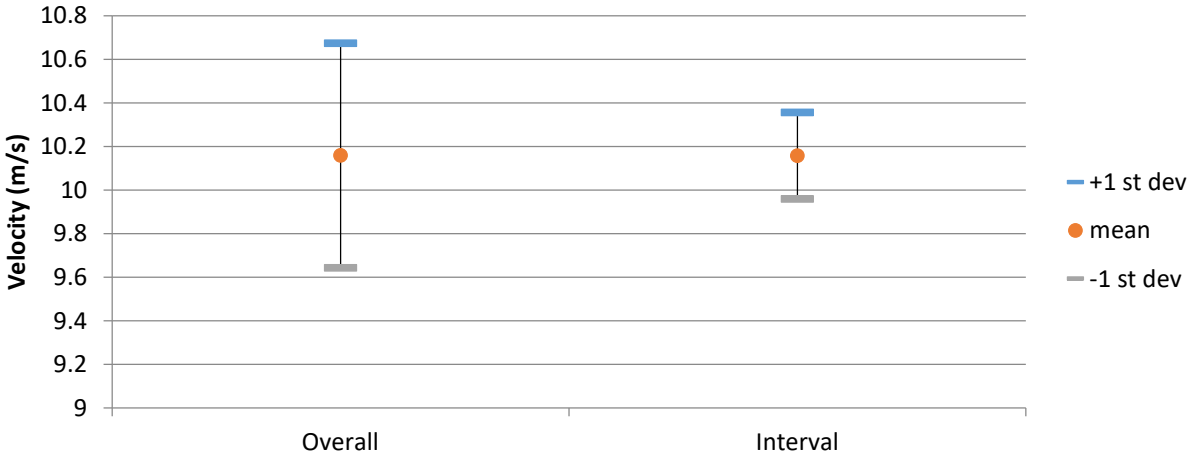
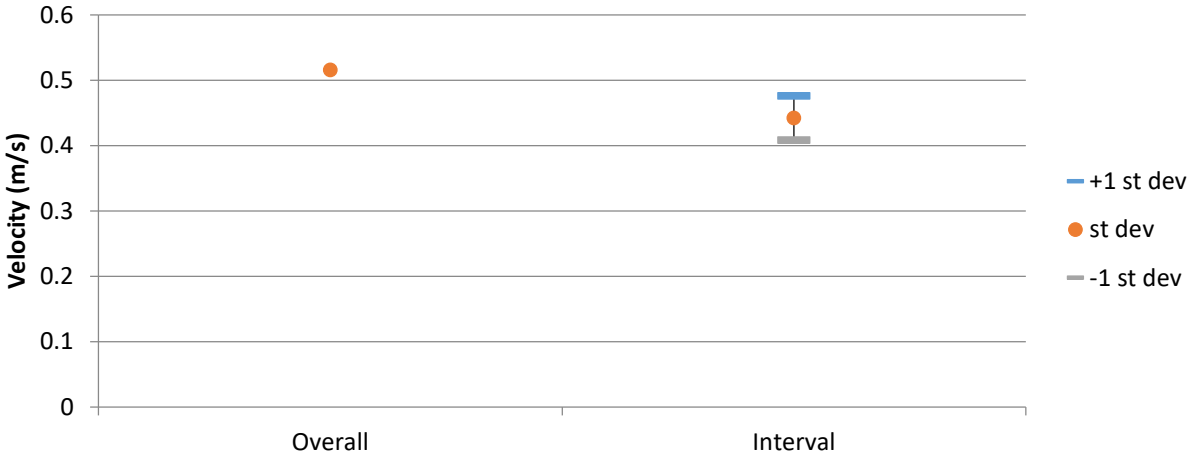


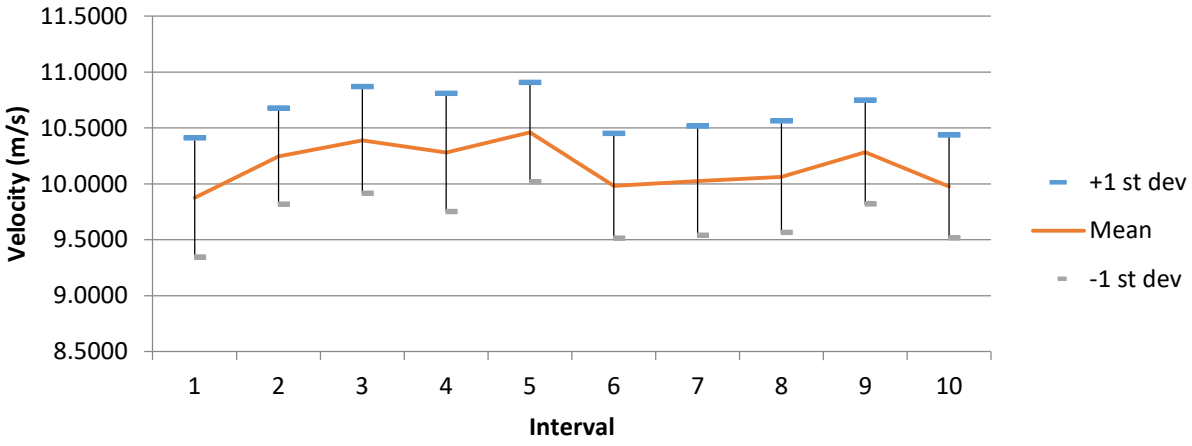
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 257
Blockage Condition: 2D at 2'
Blower Frequency: 50 Hz
Inlet Probe Location: A2
First Sample Date: 23-Aug-13
First Sample Time: 10:17:24.968

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.1318	7.0928	9.1802	0.6312
u	8.8800	4.3400	6.5386	0.8085
v	-3.3400	-7.7700	-5.7313	0.5096
w	0.3220	-5.3500	-2.7592	0.7406

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	9.6176	8.0884	8.8847	0.1839	2.0697	864	6.91 %
2	9.4084	7.9676	8.7716	0.1809	2.0628	1605	12.84 %
3	10.2531	8.1783	9.1267	0.2677	2.9337	273	2.18 %
4	11.0209	8.3373	9.3470	0.4911	5.2545	70	0.56 %
5	9.6959	7.4904	8.6157	0.2861	3.3205	1636	13.09 %
6	10.5613	7.3145	8.7417	0.5301	6.0636	2034	16.27 %
7	10.9845	8.1455	9.5396	0.7132	7.4761	103	0.82 %
8	11.1318	7.8464	9.4435	0.7589	8.0362	600	4.80 %
9	11.0708	7.8042	9.7686	0.5835	5.9734	27	0.22 %
10	10.9642	7.0928	9.2368	0.6616	7.1622	1199	9.59 %
		Average	9.1476	0.4657	5.0353		
		St dev	0.3651	0.2089	2.1555		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	6.0440	-5.4613	-3.4953	0.3641	0.2875	0.4292	6.0241	4.7574	7.1015
2	5.8331	-5.5137	-3.4929	0.3493	0.2651	0.3957	5.9890	4.5440	6.7832
3	6.4052	-5.8645	-2.7643	0.3982	0.2412	0.3026	6.2170	3.7650	4.7248
4	6.8245	-5.7936	-2.6340	0.6014	0.3065	0.2725	8.8117	4.4906	3.9932
5	5.8442	-5.3466	-3.3150	0.4677	0.3109	0.5173	8.0025	5.3201	8.8523
6	6.1718	-5.1207	-3.3070	0.8928	0.4317	0.6829	14.4664	6.9955	11.0656
7	7.2158	-5.6777	-2.3222	0.9302	0.5134	0.8289	12.8905	7.1145	11.4879
8	6.8026	-6.0656	-2.3599	0.8509	0.4245	0.4618	12.5088	6.2405	6.7882
9	7.1800	-6.2377	-2.1432	0.5622	0.4263	0.4612	7.8300	5.9375	6.4239
10	6.6552	-5.9771	-2.1268	0.6679	0.5852	0.6539	10.0354	8.7926	9.8249

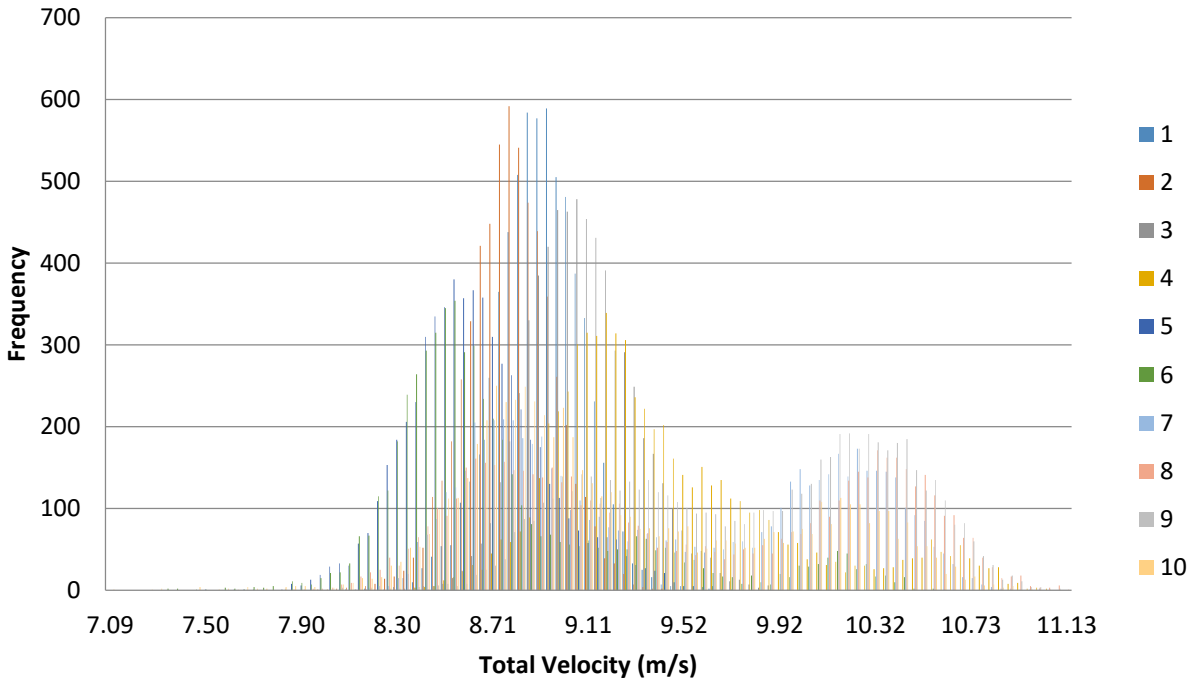


Figure 1. Velocity histogram for each interval (100 bins).

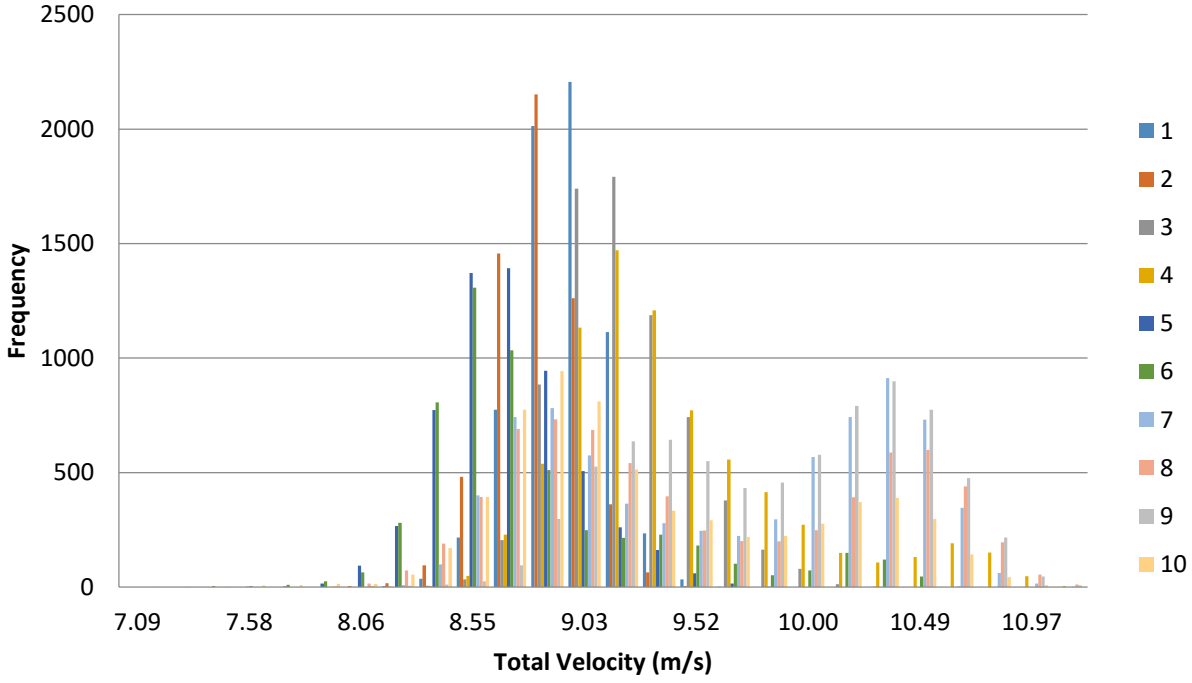
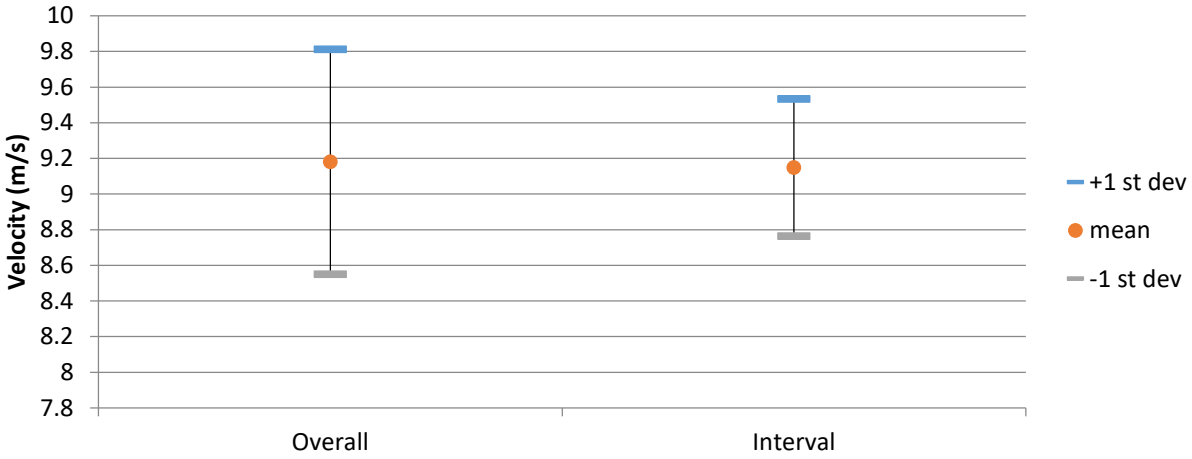
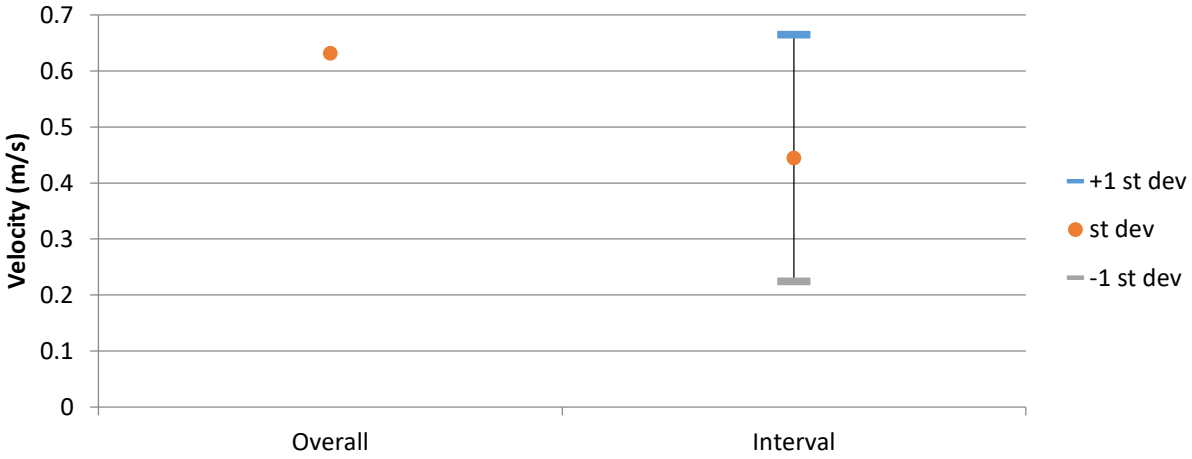


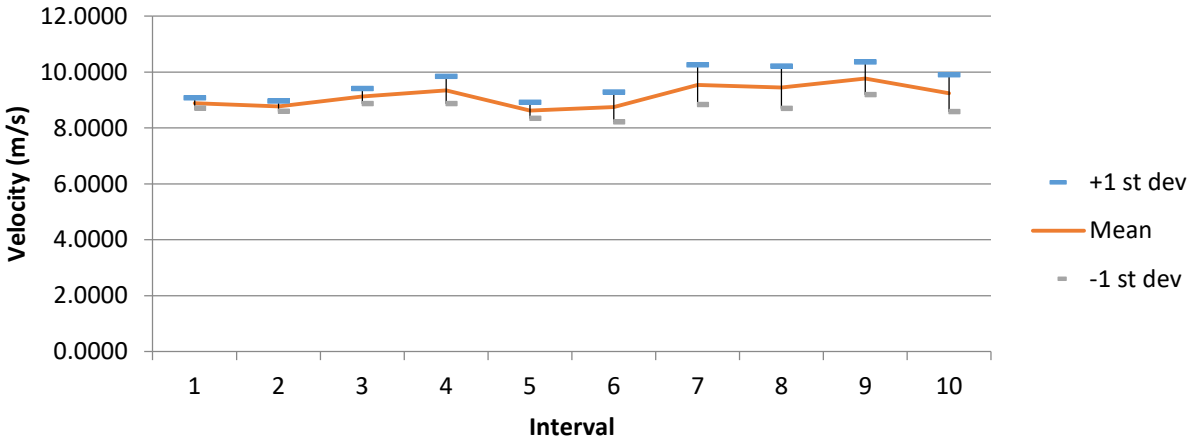
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 258
Blockage Condition: 2D at 2'
Blower Frequency: 50 Hz
Inlet Probe Location: 258
First Sample Date: 23-Aug-13
First Sample Time: 10:18:46.718

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.7738	6.2653	8.3102	0.4825
u	8.6300	4.2100	6.2092	0.5932
v	-2.4000	-7.2700	-5.4060	0.5948
w	2.4100	-3.6300	-0.3921	0.8081

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	9.5419	7.5596	8.2376	0.2065	2.5063	1280	10.24 %
2	9.6443	7.3787	8.1959	0.2414	2.9456	643	5.14 %
3	9.6468	6.7262	7.9844	0.2706	3.3895	483	3.86 %
4	9.9375	6.3068	8.4104	0.5370	6.3844	85	0.68 %
5	10.7738	6.2653	8.8103	0.5933	6.7342	777	6.22 %
6	10.6898	6.5028	8.7922	0.5465	6.2158	460	3.68 %
7	9.8878	6.4450	8.0273	0.4286	5.3397	30	0.24 %
8	9.1535	6.6581	8.1967	0.3143	3.8344	0	0.00 %
9	9.9769	7.5403	8.3758	0.2898	3.4596	500	4.00 %
10	9.5056	6.8599	8.0848	0.2598	3.2130	972	7.78 %
		Average	8.3115	0.3688	4.4023		
		St dev	0.2766	0.1368	1.5133		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.8090	-5.8225	0.1178	0.2642	0.2100	0.3565	4.5483	3.6157	6.1375
2	5.8664	-5.7025	-0.0230	0.3022	0.2433	0.3823	5.1520	4.1474	6.5160
3	5.7768	-5.4856	-0.0381	0.3407	0.2946	0.3959	5.8977	5.1004	6.8541
4	6.5012	-5.1224	-1.2667	0.6069	0.4311	0.5999	9.3346	6.6310	9.2270
5	6.5788	-5.6692	-1.1266	0.6799	0.5566	0.7144	10.3346	8.4604	10.8585
6	6.5646	-5.5542	-1.5504	0.6505	0.7060	0.5760	9.9087	10.7550	8.7747
7	6.5284	-4.5560	0.0300	0.6282	0.5896	0.7081	9.6229	9.0321	10.8464
8	6.4778	-4.9748	0.1965	0.4434	0.4857	0.3214	6.8455	7.4982	4.9619
9	5.9910	-5.8234	-0.2159	0.3159	0.2635	0.4674	5.2735	4.3976	7.8013
10	5.8803	-5.5239	0.0042	0.3595	0.2855	0.3593	6.1137	4.8557	6.1097

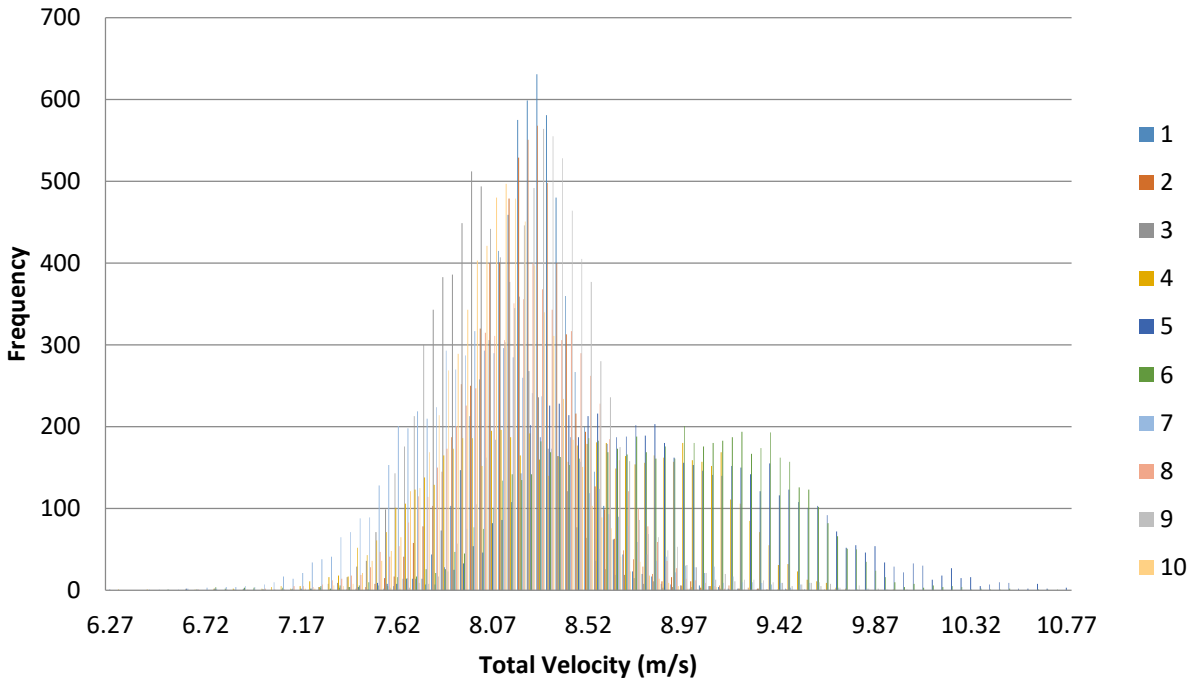


Figure 1. Velocity histogram for each interval (100 bins).

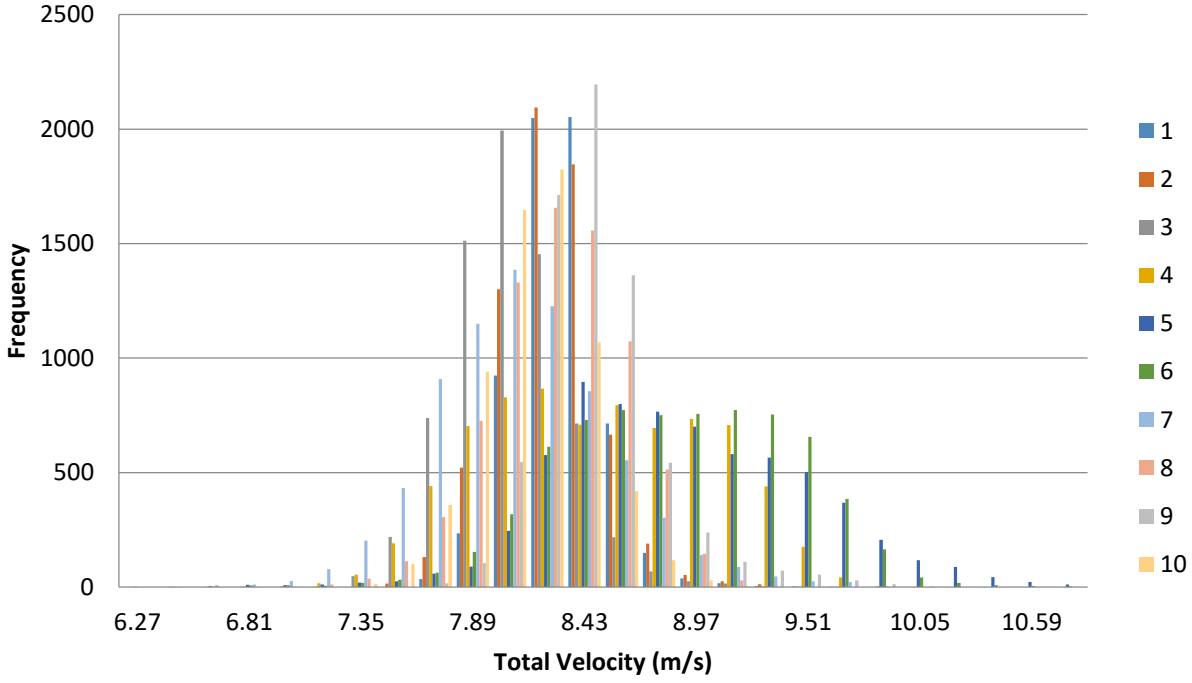
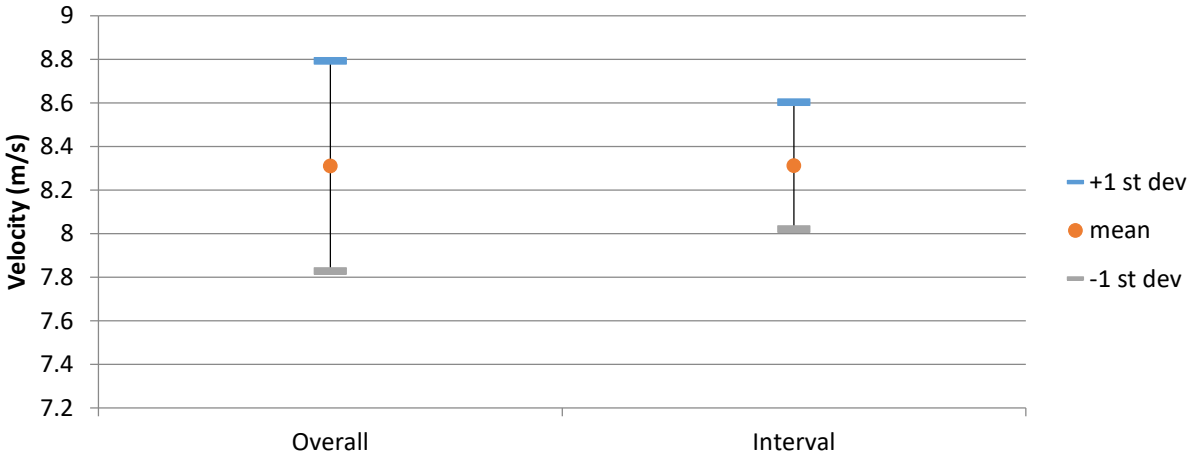
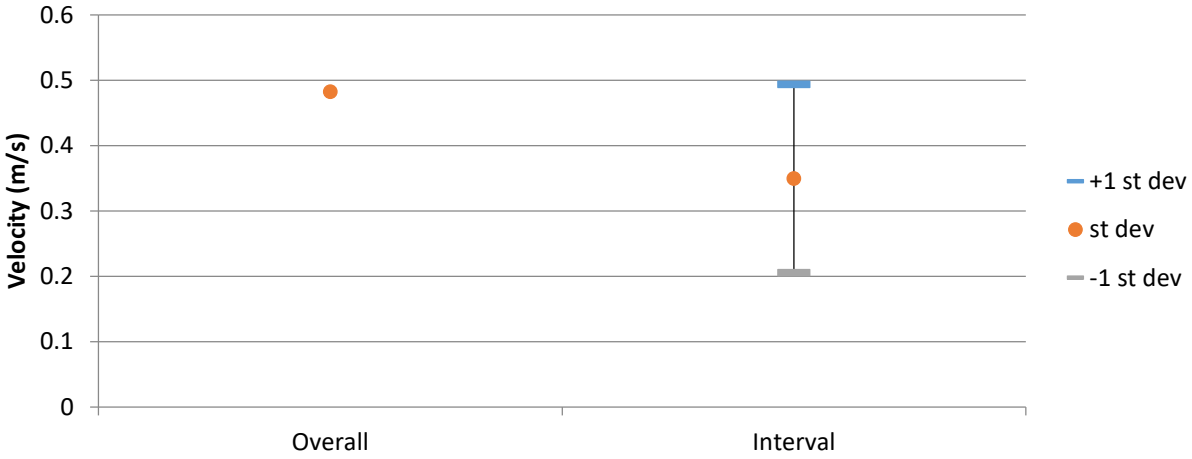


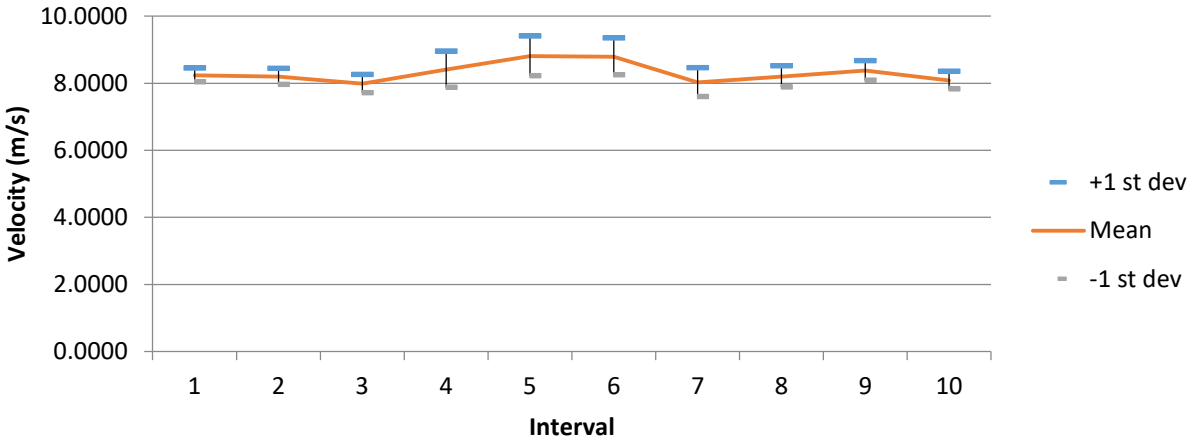
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 259
Blockage Condition: 2D at 2'
Blower Frequency: 50 Hz
Inlet Probe Location: A5
First Sample Date: 23-Aug-13
First Sample Time: 10:20:20.843

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.3120	5.4814	8.3075	0.5320
u	8.1600	3.6500	5.8851	0.4519
v	-3.8600	-7.7200	-5.7952	0.4229
w	2.3100	-3.2900	-0.3925	0.7356

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	9.6173	6.1693	7.9638	0.3300	4.1431	1206	9.65 %
2	9.9327	7.0608	8.2540	0.3844	4.6577	1843	14.74 %
3	10.4076	6.5343	8.5854	0.3312	3.8575	4221	33.77 %
4	10.8152	5.9291	8.4496	0.3848	4.5540	2621	20.97 %
5	9.6033	5.5135	8.0027	0.3950	4.9358	2470	19.76 %
6	9.8479	6.3059	7.8760	0.3500	4.4436	797	6.38 %
7	10.2135	7.3533	8.3552	0.3931	4.7043	1587	12.70 %
8	10.5160	5.4814	8.3657	0.4974	5.9459	3614	28.91 %
9	11.1600	6.4131	8.8574	0.6028	6.8056	2470	19.76 %
10	11.3120	6.1079	8.6570	0.5672	6.5516	1751	14.01 %
		Average	8.3367	0.4236	5.0599		
		St dev	0.3032	0.0926	0.9635		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.7200	-5.4990	-0.2453	0.3647	0.2832	0.5488	6.3764	4.9504	9.5947
2	5.8795	-5.7567	0.0313	0.3497	0.4273	0.5126	5.9485	7.2678	8.7181
3	5.9595	-6.1478	-0.2963	0.2969	0.2802	0.5028	4.9814	4.7016	8.4368
4	5.9206	-5.9887	-0.2325	0.4131	0.3006	0.5579	6.9774	5.0768	9.4227
5	5.5684	-5.7019	-0.5403	0.3221	0.2768	0.4558	5.7841	4.9715	8.1854
6	5.7165	-5.3755	-0.0892	0.3808	0.3440	0.5555	6.6608	6.0172	9.7170
7	5.9570	-5.8101	-0.0497	0.4186	0.3285	0.6593	7.0274	5.5144	11.0672
8	5.8945	-5.8473	-0.4327	0.4393	0.3736	0.8816	7.4522	6.3373	14.9570
9	6.1924	-6.1690	-1.1565	0.5236	0.4159	0.7938	8.4553	6.7165	12.8193
10	6.1231	-5.9852	-1.0422	0.5401	0.3270	0.6816	8.8201	5.3406	11.1310

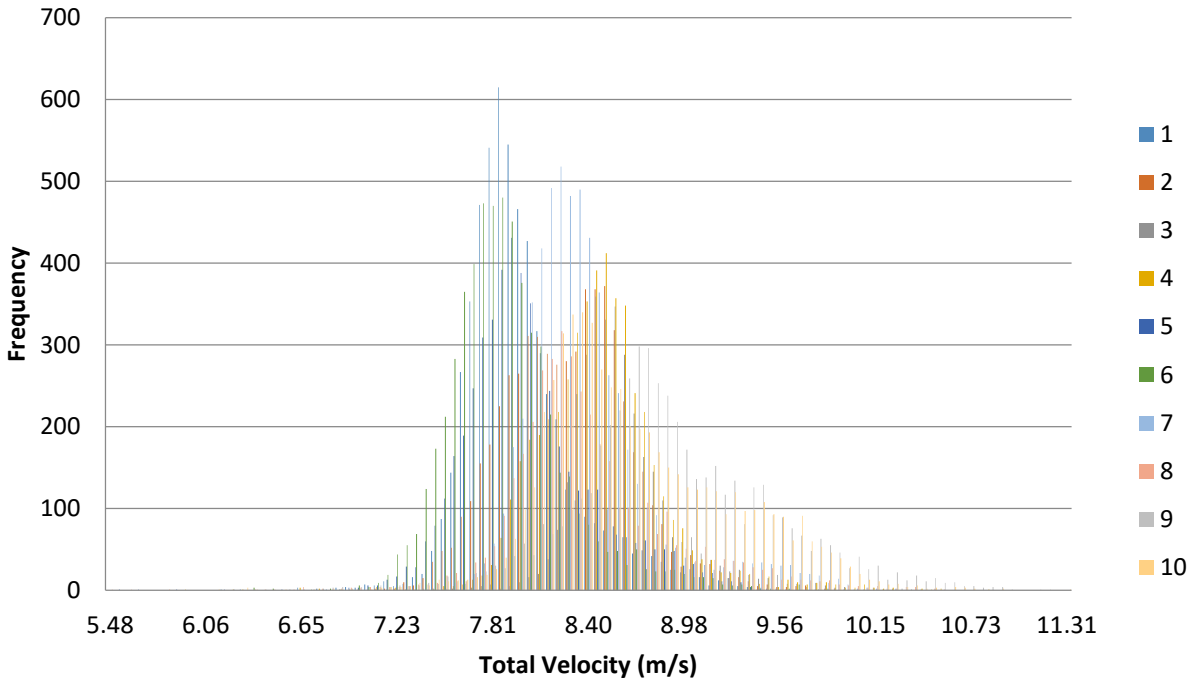


Figure 1. Velocity histogram for each interval (100 bins).

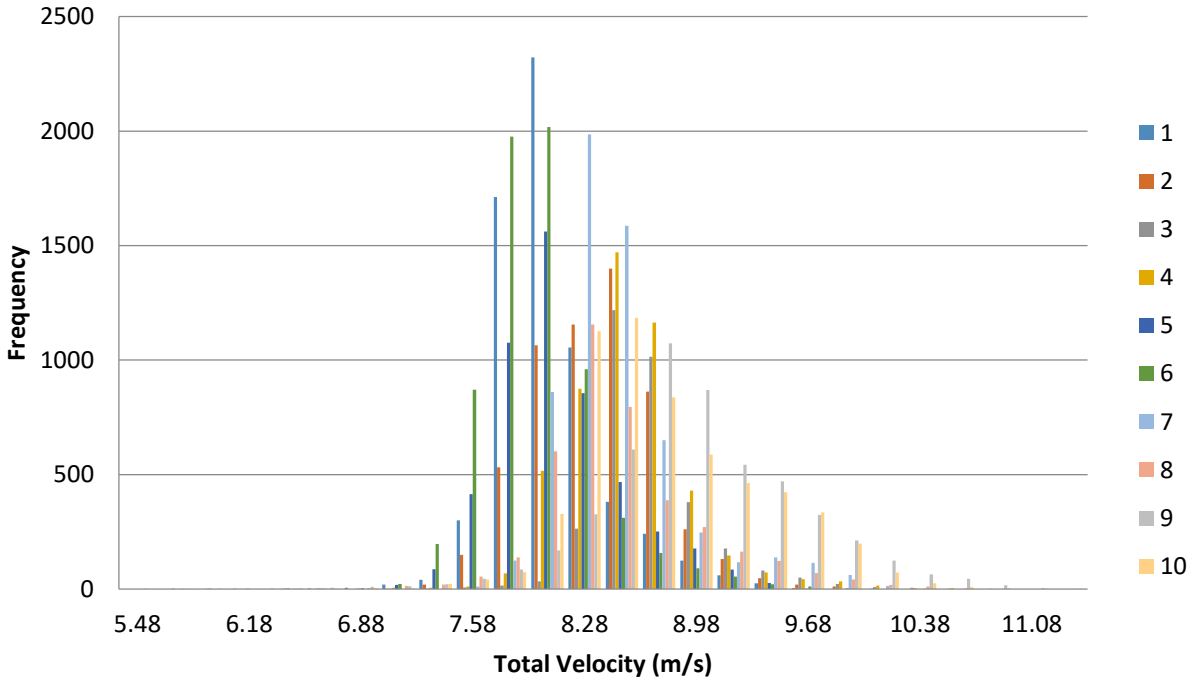
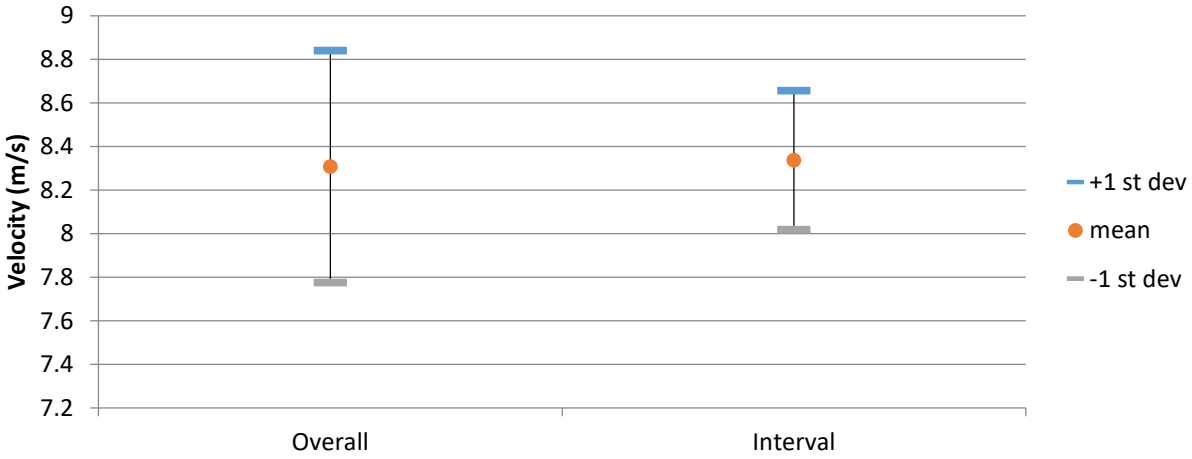
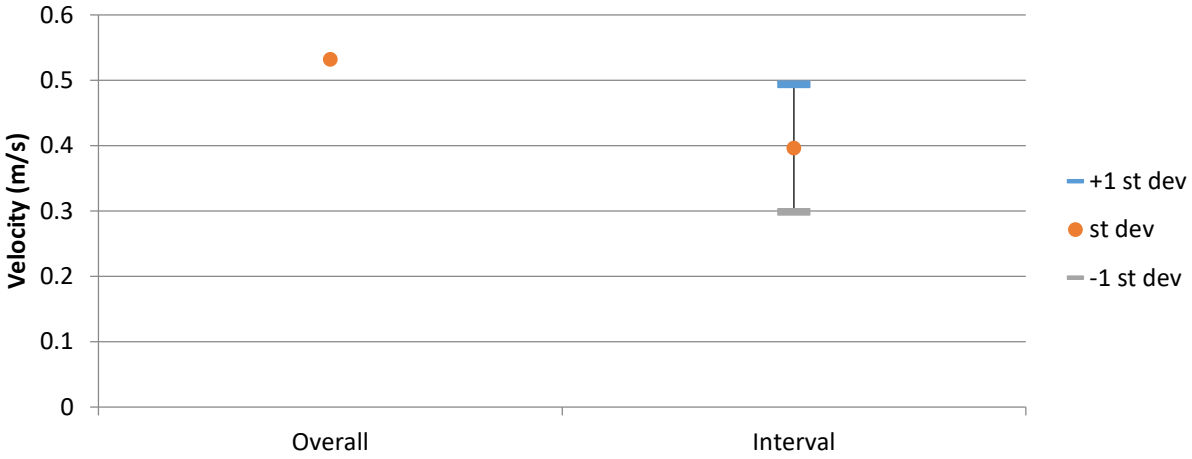


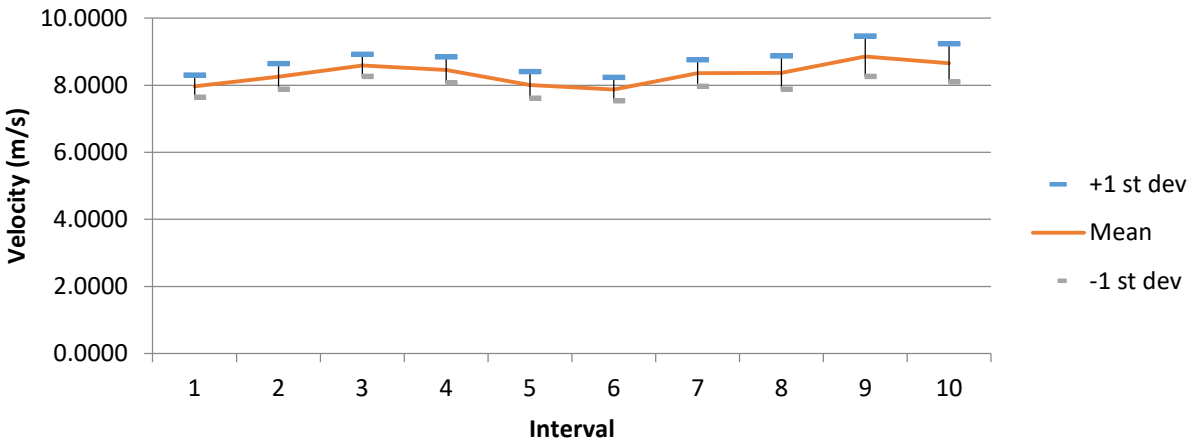
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 260
Blockage Condition: 2D at 2'
Blower Frequency: 50 Hz
Inlet Probe Location: E5
First Sample Date: 23-Aug-13
First Sample Time: 10:21:54.765

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	21.4183	2.0830	10.3844	1.6462
u	17.3000	1.9300	8.6475	1.7565
v	8.2000	-12.6000	-2.7431	3.1326
w	11.2000	-10.9000	2.4140	3.0848

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	19.9642	4.1432	10.7828	1.8228	16.9051	354	2.83 %
2	15.9412	4.3567	9.7522	1.3805	14.1554	706	5.65 %
3	16.6938	3.8313	10.1438	1.2619	12.4400	591	4.73 %
4	16.3391	3.9338	9.8595	1.4336	14.5404	940	7.52 %
5	16.8266	3.3474	9.5830	1.3040	13.6070	547	4.38 %
6	16.2893	4.5607	10.0890	1.5584	15.4464	267	2.14 %
7	18.3151	4.9775	10.9139	1.4828	13.5865	86	0.69 %
8	21.4183	3.7226	11.2441	1.6902	15.0321	97	0.78 %
9	18.9186	3.8759	11.0504	1.6930	15.3210	140	1.12 %
10	17.9842	2.0830	10.2548	1.7138	16.7118	281	2.25 %
		Average	10.3673	1.5341	14.7746		
		St dev	0.5566	0.1815	1.3331		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.0455	-3.2847	1.9026	1.8816	2.7833	3.4753	20.8017	30.7700	38.4201
2	8.0352	0.2547	4.6511	1.5779	2.3869	1.6011	19.6370	29.7060	19.9265
3	8.0109	-2.1274	4.8287	1.3887	2.8647	1.5296	17.3349	35.7605	19.0946
4	7.7283	-2.0719	4.5370	1.5509	3.0957	1.6351	20.0673	40.0561	21.1567
5	7.6322	-0.7035	4.6432	1.5230	3.0079	1.3659	19.9551	39.4110	17.8960
6	8.6817	-0.5161	3.3336	1.8130	3.2098	1.9690	20.8825	36.9721	22.6797
7	9.3544	-4.7447	0.6088	1.4395	1.6474	2.4781	15.3888	17.6106	26.4913
8	9.6017	-4.8667	-1.4025	1.4869	1.8666	2.3976	15.4858	19.4408	24.9705
9	9.6259	-4.5084	-0.0172	1.6666	1.8075	2.4394	17.3138	18.7771	25.3425
10	8.5156	-4.3897	1.7512	1.6161	2.2503	2.3603	18.9776	26.4252	27.7168

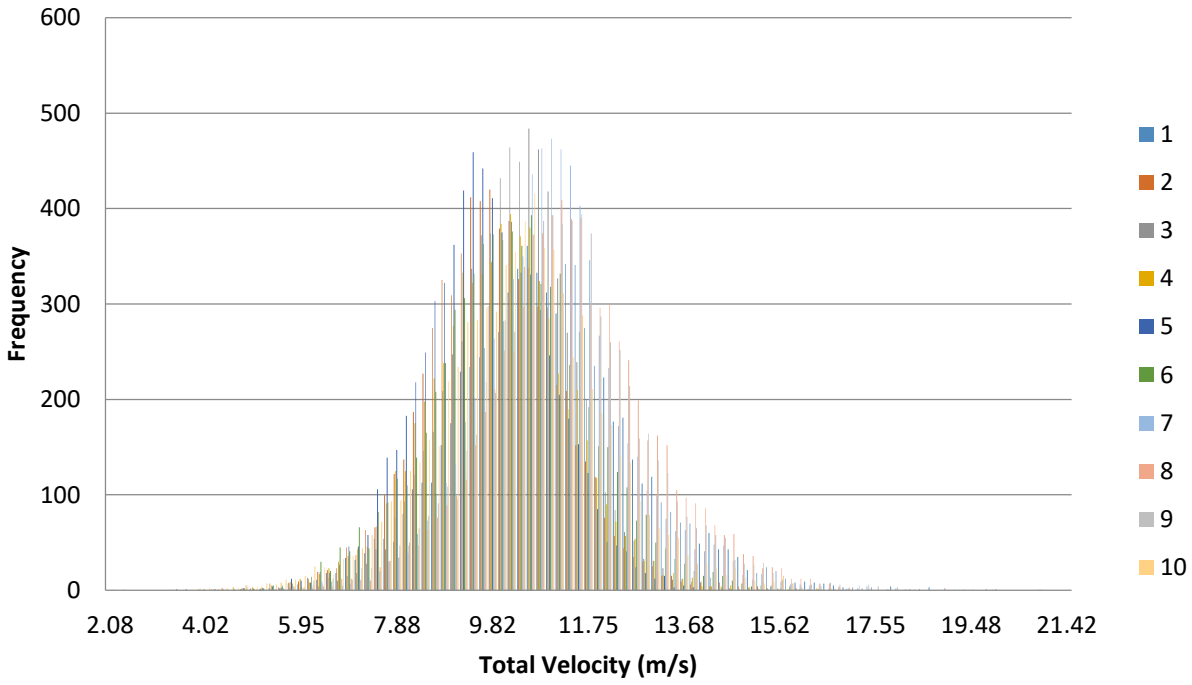


Figure 1. Velocity histogram for each interval (100 bins).

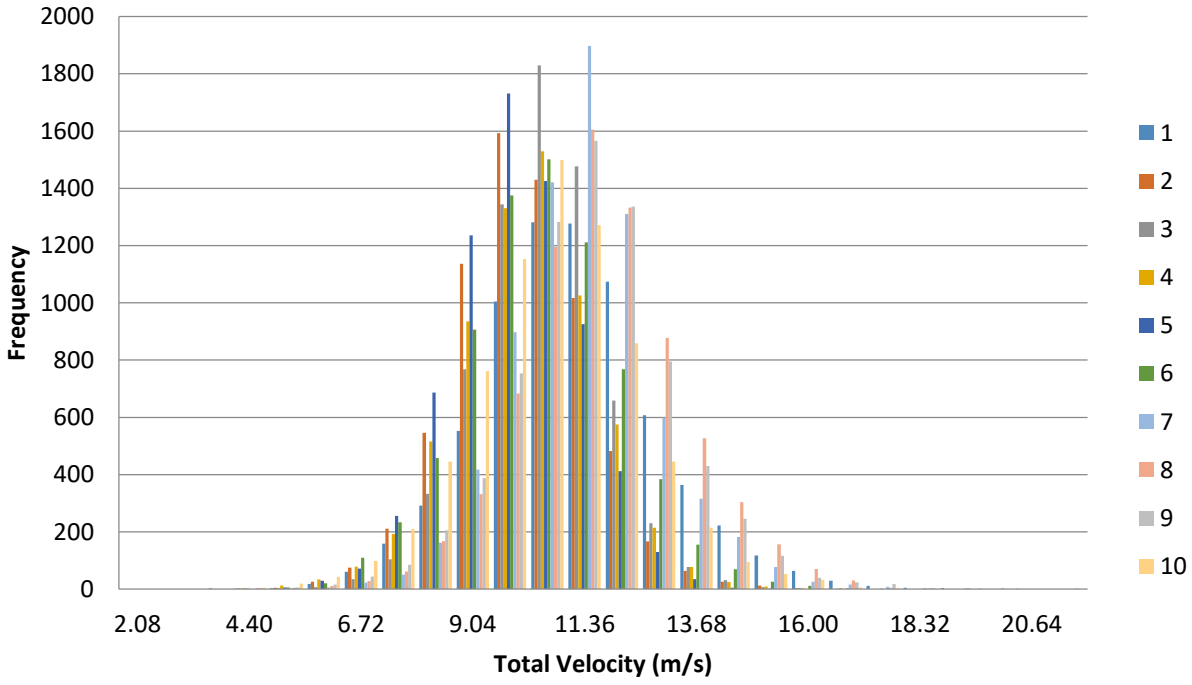
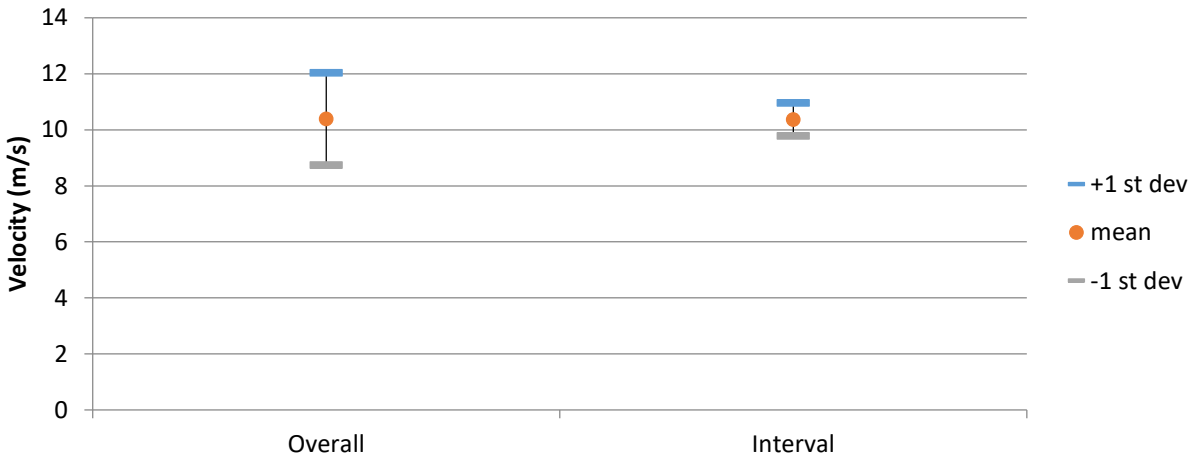
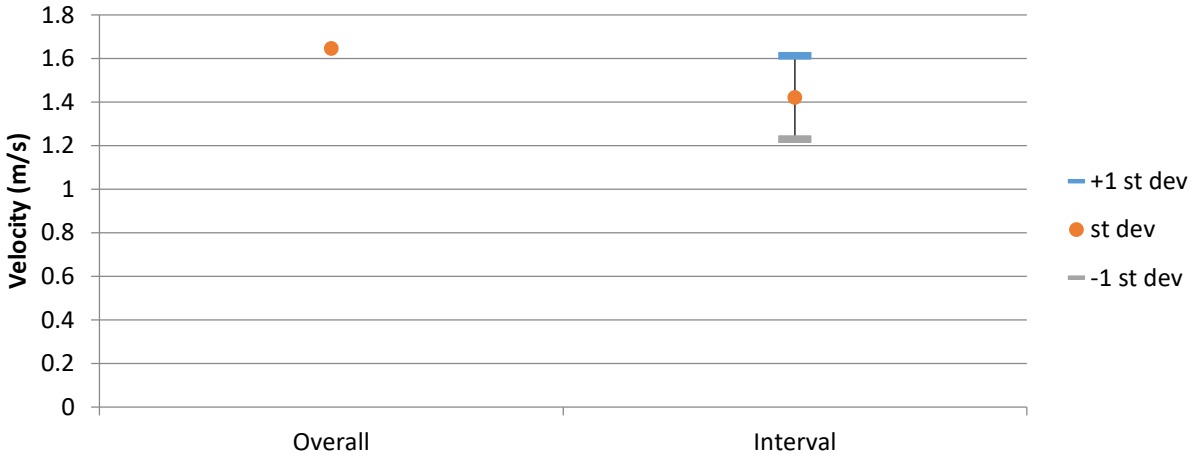


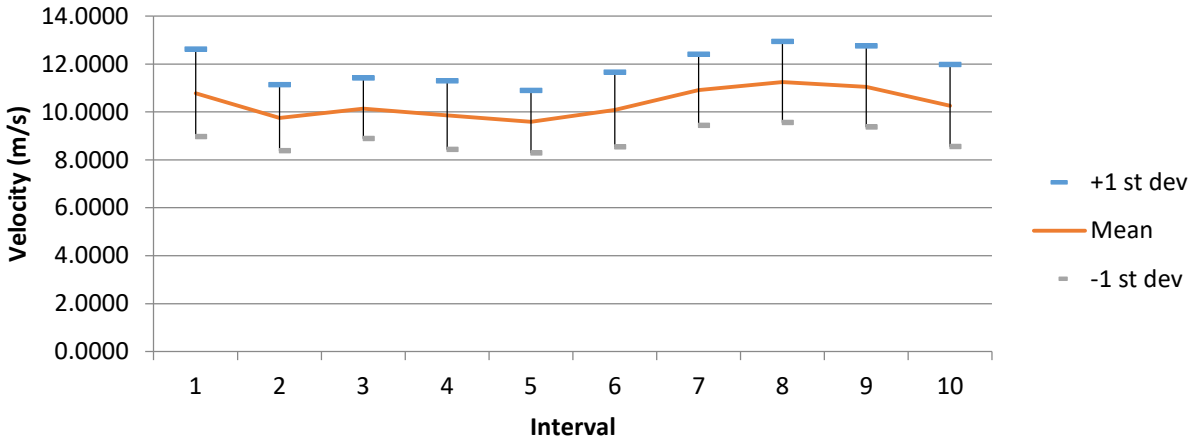
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 261
Blockage Condition: 2D at 2'
Blower Frequency: 50 Hz
Inlet Probe Location: E4
First Sample Date: 23-Aug-13
First Sample Time: 10:23:14.640

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	23.3914	2.9081	12.0540	1.7167
u	20.2000	2.2600	10.4590	1.9638
v	12.7000	-11.4000	0.1569	2.7409
w	13.0000	-10.9000	2.8089	4.4241

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	20.2819	4.5880	13.2971	1.6245	12.2171	222	1.78 %
2	20.8012	3.1157	12.3154	1.7111	13.8941	1049	8.39 %
3	18.6802	4.9327	11.5215	1.6578	14.3891	634	5.07 %
4	18.9797	5.4429	11.9132	1.5971	13.4063	426	3.41 %
5	19.7149	3.9419	11.8561	1.6847	14.2099	882	7.06 %
6	19.9288	2.9645	11.4392	1.8583	16.2452	333	2.66 %
7	21.1552	2.9081	11.7512	1.6450	13.9984	61	0.49 %
8	23.3914	4.8055	12.3782	1.5078	12.1811	614	4.91 %
9	17.8026	5.2243	12.0383	1.5145	12.5806	1143	9.14 %
10	18.9278	4.8964	12.0125	1.5159	12.6196	1475	11.80 %
		Average	12.0523	1.6317	13.5742		
		St dev	0.5033	0.1025	1.1914		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	11.9933	-0.3391	3.3481	1.8771	2.5415	3.7827	15.6510	21.1910	31.5397
2	10.1837	-0.0547	5.3337	2.0075	2.6173	3.4001	19.7132	25.7012	33.3874
3	9.4786	-1.2066	5.5276	1.6495	2.3795	2.2932	17.4025	25.1040	24.1937
4	10.2546	1.1046	1.7694	1.7395	2.9293	4.8340	16.9633	28.5656	47.1396
5	10.2436	0.0332	2.8047	1.9264	2.6980	4.4296	18.8063	26.3384	43.2429
6	9.9492	2.2665	1.5330	1.8704	2.8117	4.0540	18.7994	28.2606	40.7475
7	10.9099	0.6170	-1.9971	1.6571	2.6003	2.8102	15.1892	23.8345	25.7585
8	11.0743	-0.9606	1.2574	1.8152	2.0494	4.7812	16.3910	18.5061	43.1739
9	10.4823	-0.5577	3.8056	1.9844	2.3546	3.6143	18.9309	22.4622	34.4804
10	9.8159	0.5113	5.7539	1.8267	2.3990	2.7906	18.6099	24.4400	28.4291

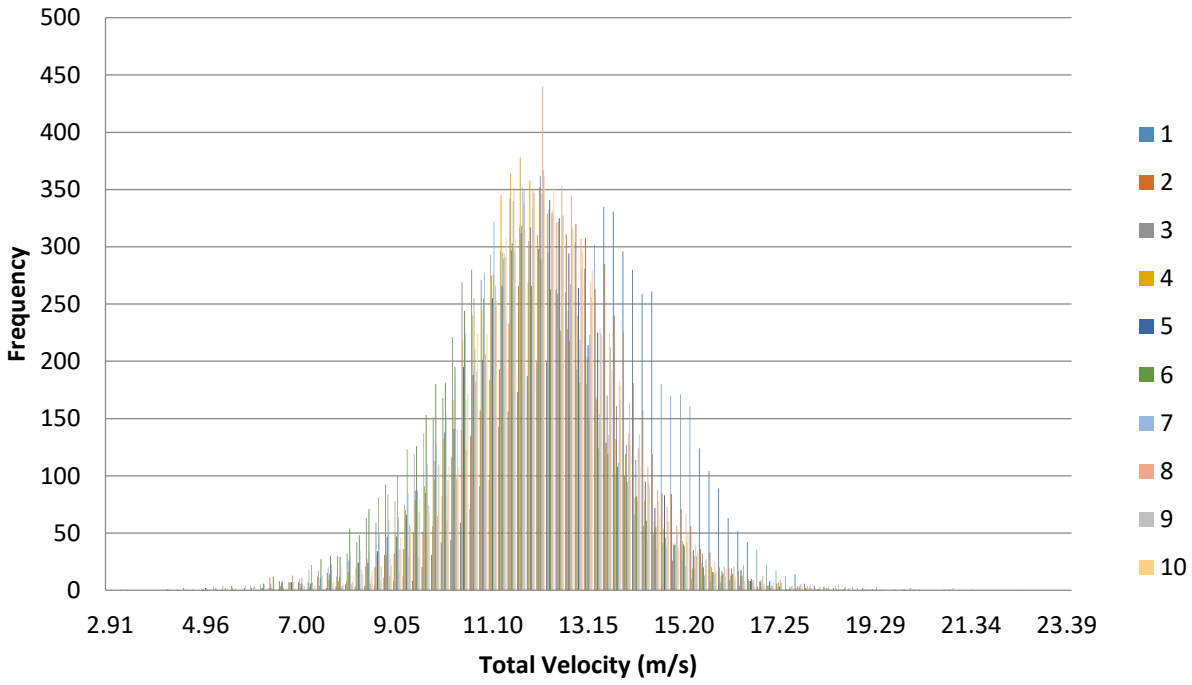


Figure 1. Velocity histogram for each interval (100 bins).

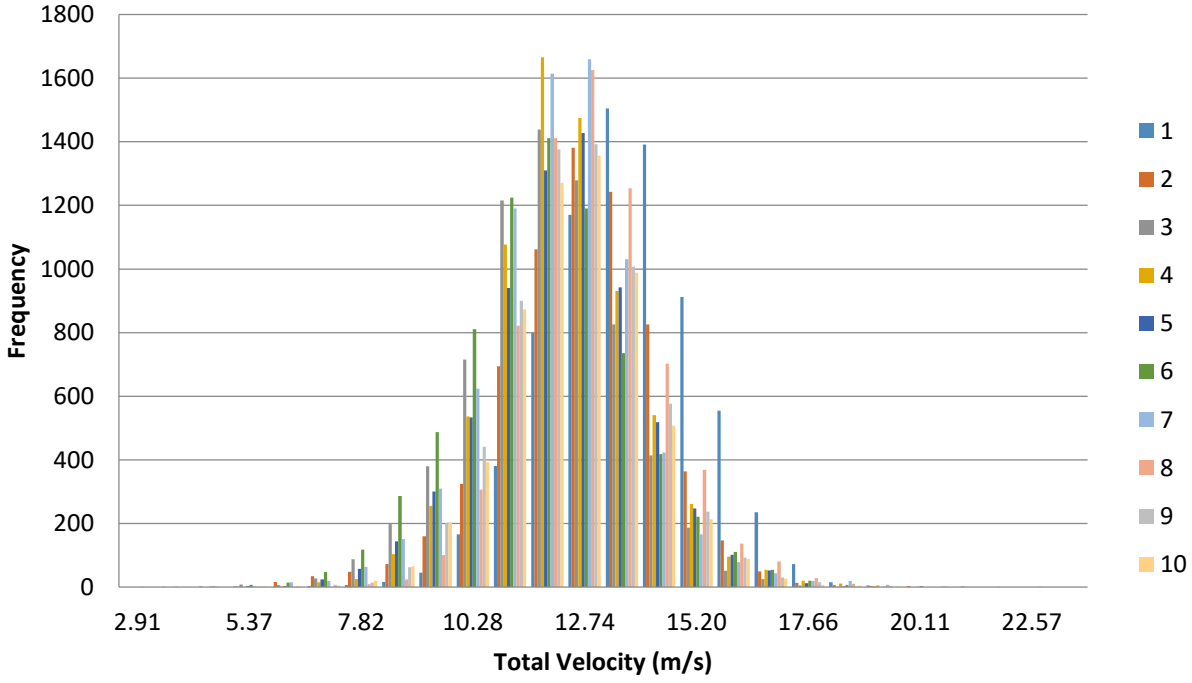
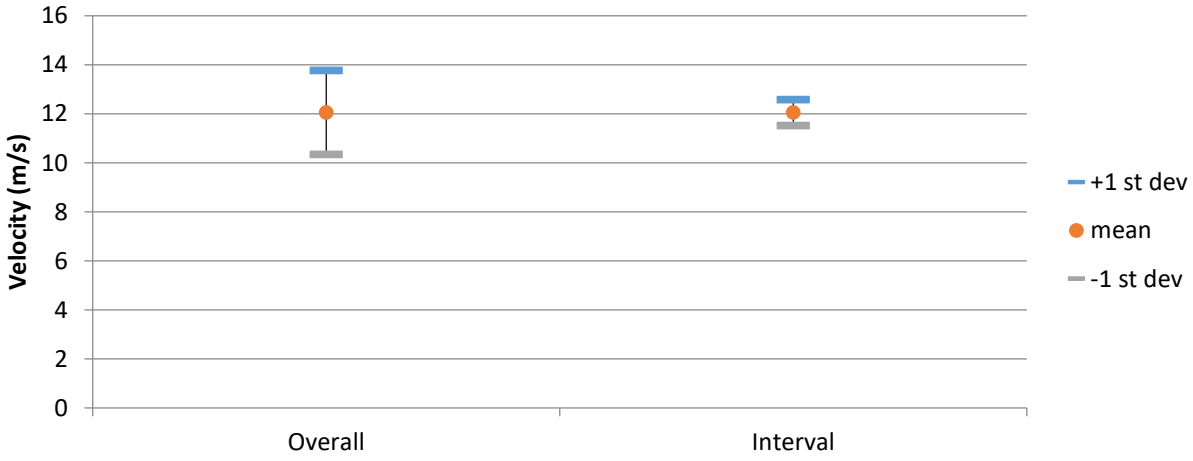
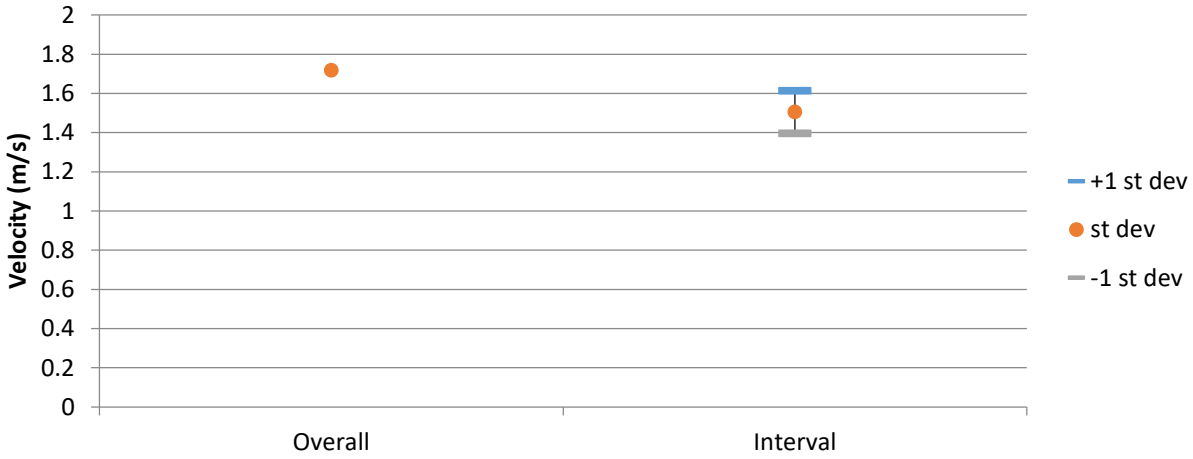


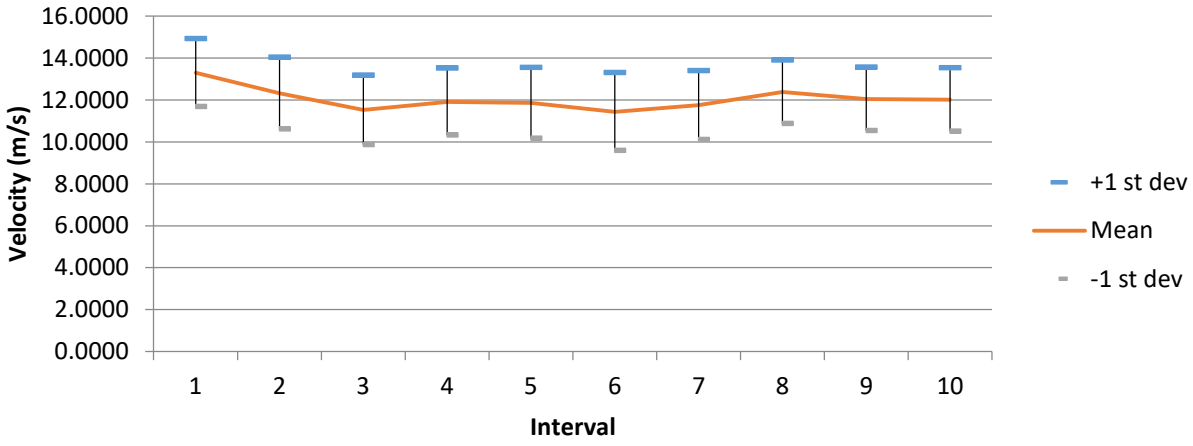
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 262
Blockage Condition: 2D at 2'
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 23-Aug-13
First Sample Time: 10:24:44.640

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	17.0196	2.0446	11.1377	0.7744
u	16.7000	1.4800	10.8012	0.8072
v	8.5300	-6.4000	-0.0191	1.1929
w	9.7600	-6.4900	-1.5134	1.9018

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max	Min	Mean	St Dev	I_{vel} (%)	# Zero Values	% Zero Values
1	15.8843	6.9446	11.2016	0.5438	4.8545	0	0.00 %
2	14.7132	4.0905	11.0192	0.6920	6.2802	0	0.00 %
3	15.4007	6.0876	11.0290	0.8366	7.5851	0	0.00 %
4	14.5855	5.3910	11.3328	0.4382	3.8667	0	0.00 %
5	16.6456	2.0446	11.2909	1.1695	10.3578	6	0.05 %
6	16.7963	3.9169	10.8917	0.8793	8.0735	2	0.02 %
7	17.0196	7.4252	11.3998	0.5853	5.1341	0	0.00 %
8	15.7082	5.0407	11.1056	0.9661	8.6992	2	0.02 %
9	15.1346	5.6513	11.0091	0.6840	6.2132	0	0.00 %
10	14.6896	7.9882	11.0971	0.4563	4.1117	0	0.00 %
		Average	11.1377	0.7251	6.5176		
		St dev	0.1549	0.2240	2.0177		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.8146	-0.1534	-2.6013	0.5109	0.7954	1.0639	4.7245	7.3545	9.8377
2	10.7836	-0.2130	-1.6904	0.6861	0.9914	1.1223	6.3621	9.1937	10.4072
3	10.8113	-0.7188	-0.4692	0.9108	1.2660	1.5125	8.4250	11.7098	13.9897
4	10.7491	-0.1981	-3.1538	0.5304	0.9770	1.3637	4.9345	9.0889	12.6867
5	10.8904	0.2432	0.0072	1.2701	1.4309	2.5561	11.6626	13.1388	23.4707
6	10.6696	-0.2315	-0.1388	0.9620	1.2596	1.7259	9.0165	11.8058	16.1757
7	10.9373	0.7191	-2.6358	0.6378	1.0848	1.2751	5.8314	9.9181	11.6581
8	10.8390	0.5837	-0.5702	1.0153	1.2763	1.8600	9.3670	11.7748	17.1604
9	10.8028	0.0216	-1.2553	0.6832	1.1376	1.2770	6.3247	10.5305	11.8208
10	10.7143	-0.2431	-2.6245	0.4197	0.8209	0.8716	3.9171	7.6619	8.1348

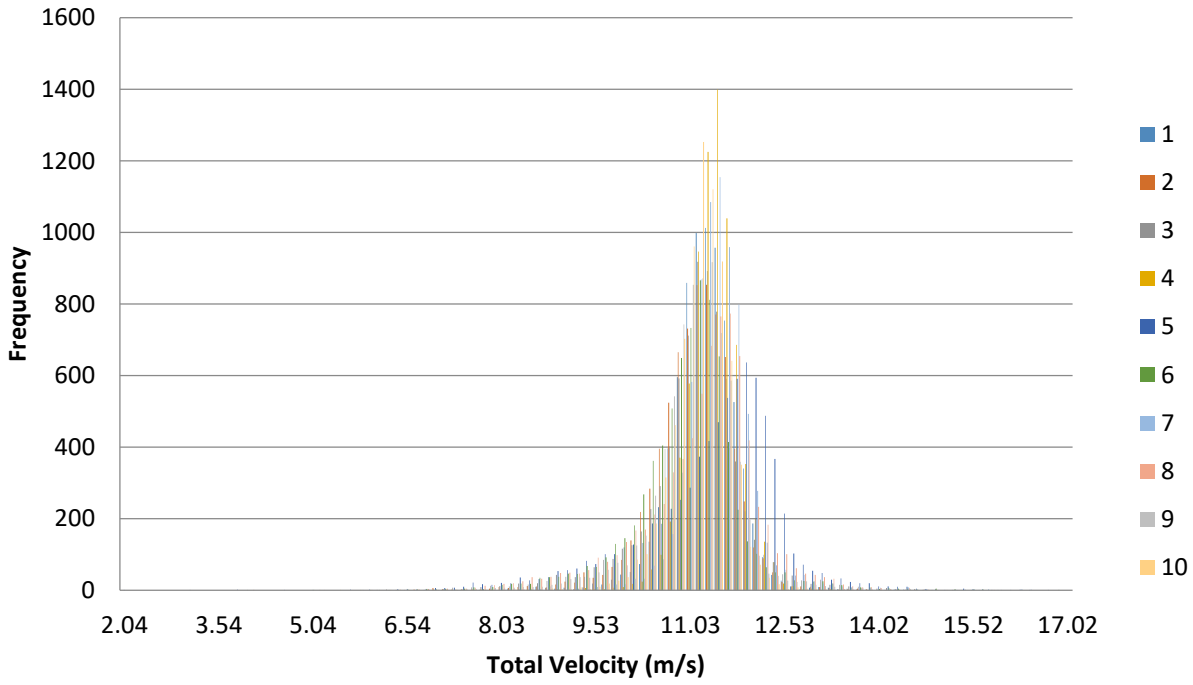


Figure 1. Velocity histogram for each interval (100 bins).

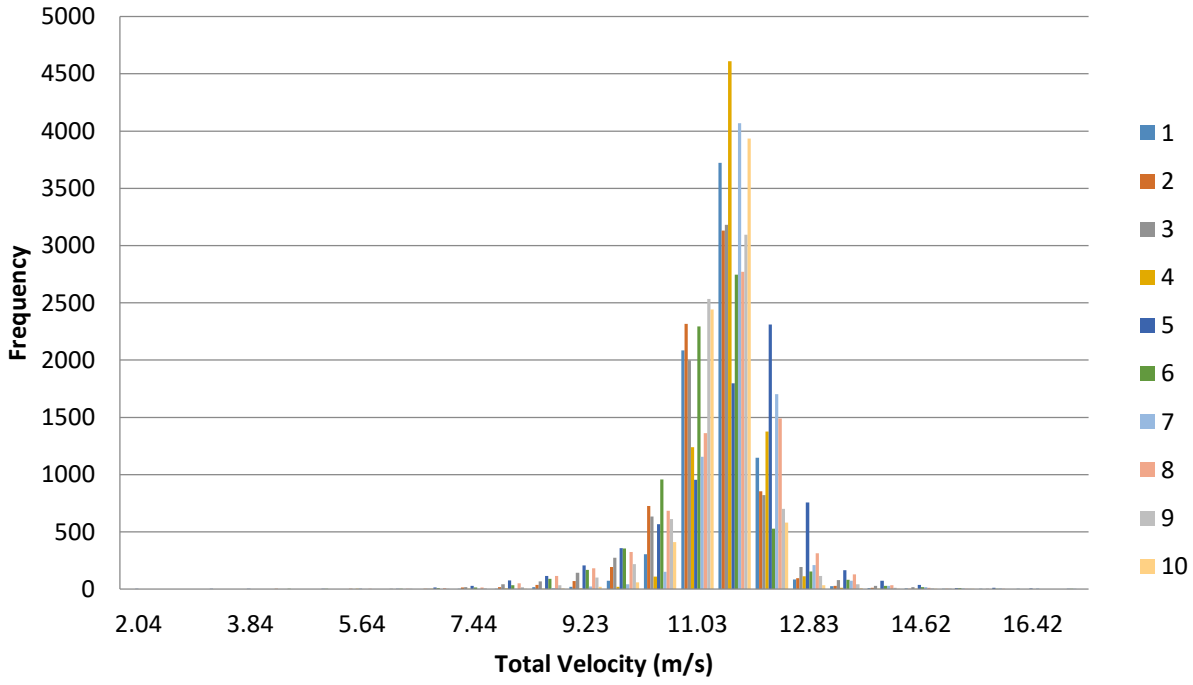
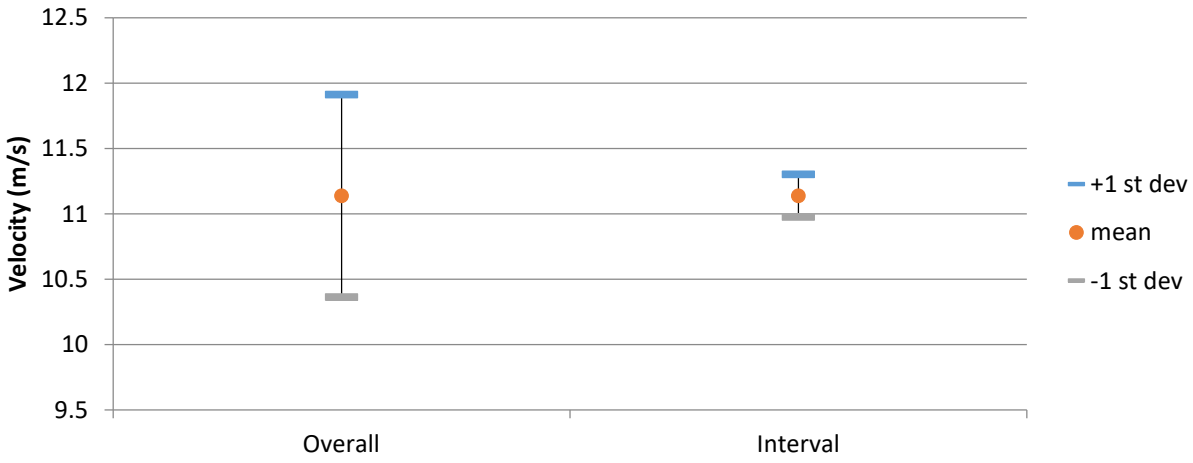
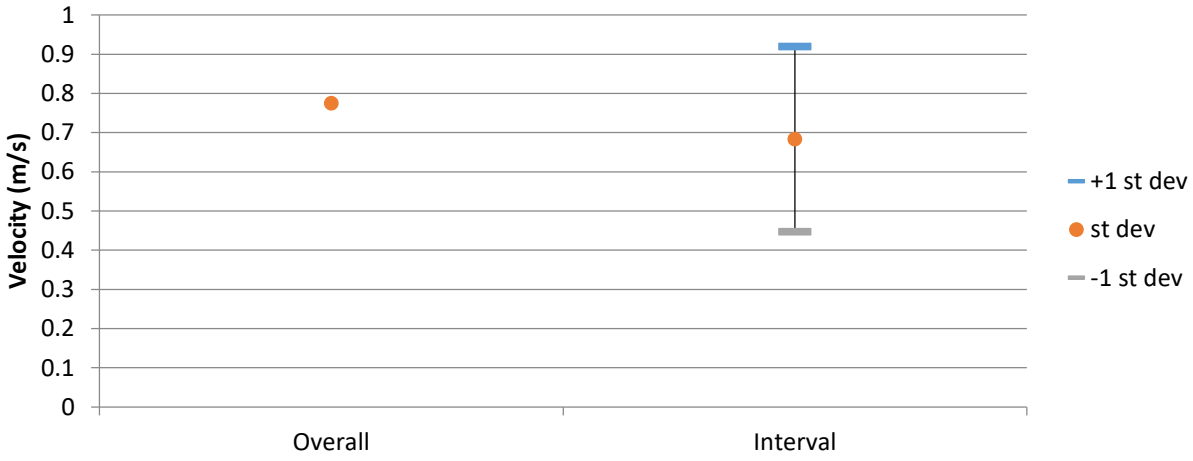


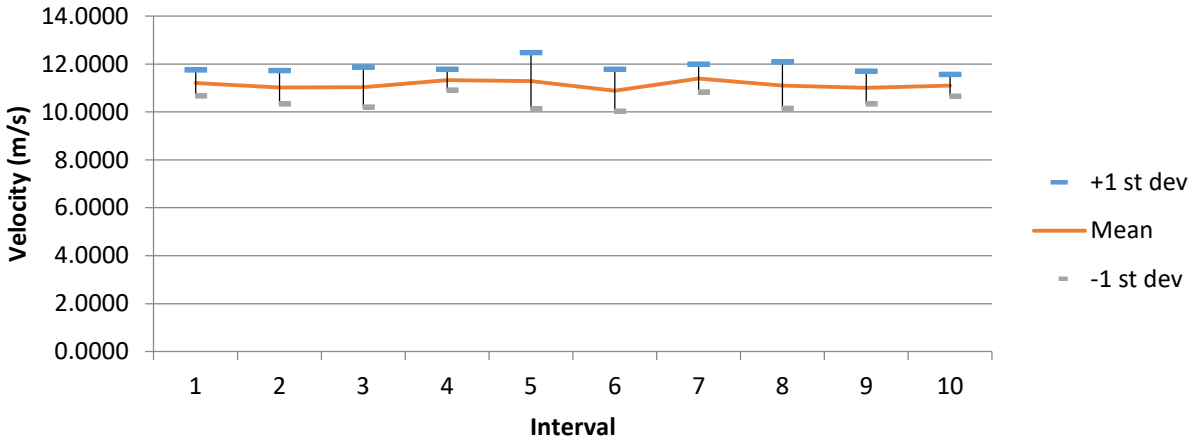
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 263
Blockage Condition: 2D at 2'
Blower Frequency: 50 Hz
Inlet Probe Location: E2
First Sample Date: 23-Aug-13
First Sample Time: 10:26:17.656

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	13.7809	11.0922	12.4240	0.3748
u	13.0000	8.9400	11.1366	0.6210
v	5.3800	-2.8100	0.6192	0.7431
w	-1.4600	-7.8500	-5.3507	0.7223

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	13.6225	11.4098	12.4114	0.3631	3.2264
2	13.7229	11.5598	12.5400	0.4046	3.4915
3	13.7809	11.0922	12.3999	0.4329	2.1456
4	13.2390	11.5066	12.2842	0.2636	2.8498
5	13.5559	11.2790	12.3377	0.3516	2.4011
6	13.5023	11.4502	12.2679	0.2946	2.6516
7	13.6801	11.5871	12.5675	0.3332	2.9818
8	13.7205	11.4652	12.5751	0.3750	2.9605
9	13.5028	11.5264	12.4179	0.3676	3.0729
10	13.6772	11.4028	12.4385	0.3822	2.8722
		Average	12.4240	0.3568	2.8653
		St Dev	0.1102	0.0498	0.3698

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	11.0402	0.2970	-5.5571	0.6228	0.7033	0.6611	5.6410	6.3700	5.9881
2	11.2618	0.2826	-5.4722	0.5100	0.3923	0.3872	4.5284	3.4839	3.4380
3	10.9214	0.6006	-5.7665	0.6066	0.6770	0.4793	5.5540	6.1985	4.3887
4	10.8081	0.8568	-5.6968	0.4426	0.7008	0.5314	4.0948	6.4839	4.9168
5	11.2401	0.6663	-4.9237	0.5993	0.6239	0.7541	5.3315	5.5511	6.7089
6	10.8343	0.9406	-5.6204	0.4666	0.5685	0.4352	4.3064	5.2476	4.0167
7	11.4408	1.4543	-4.7566	0.7267	0.9194	1.0236	6.3522	8.0361	8.9470
8	11.5297	0.1192	-4.9625	0.4456	0.5625	0.4288	3.8646	4.8789	3.7195
9	11.1755	0.4526	-5.3154	0.6355	0.3942	0.6557	5.6864	3.5272	5.8676
10	11.1142	0.5223	-5.4357	0.6383	0.7284	0.7625	5.7430	6.5535	6.8602

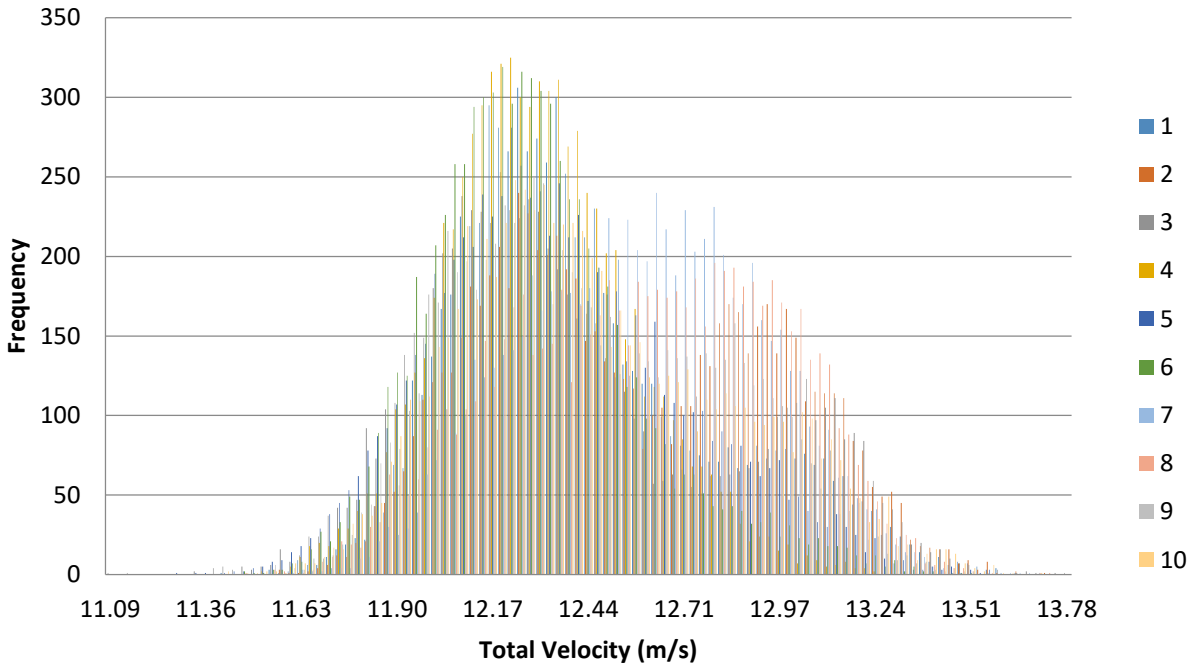


Figure 1. Velocity histogram for each interval (100 bins).

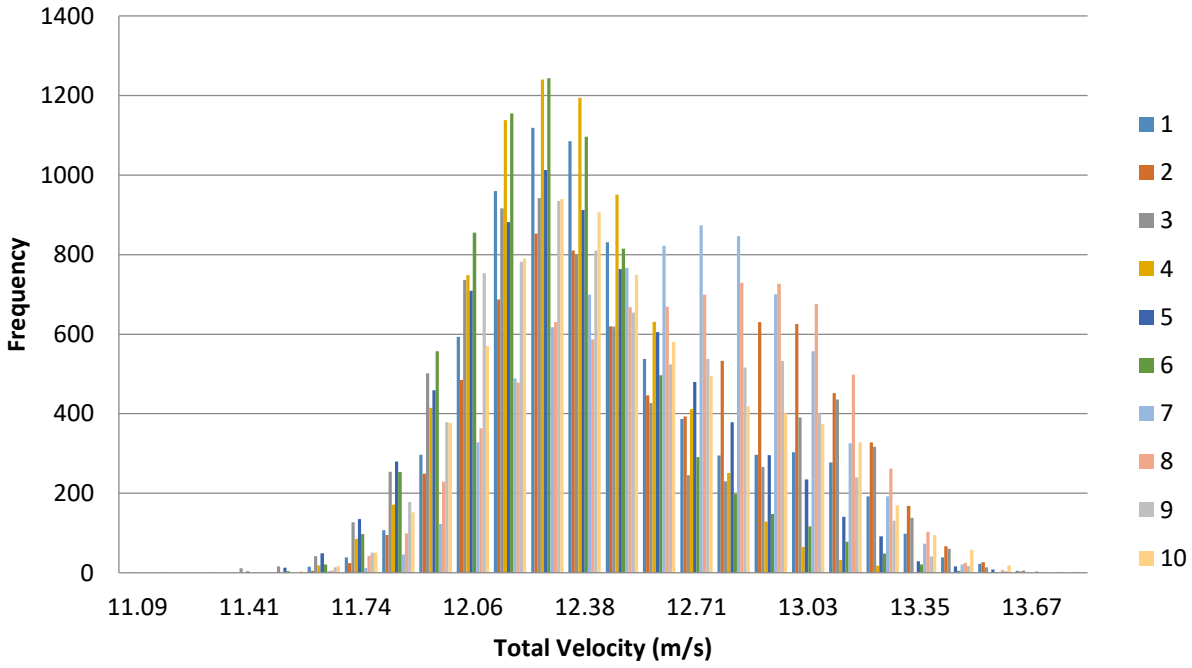
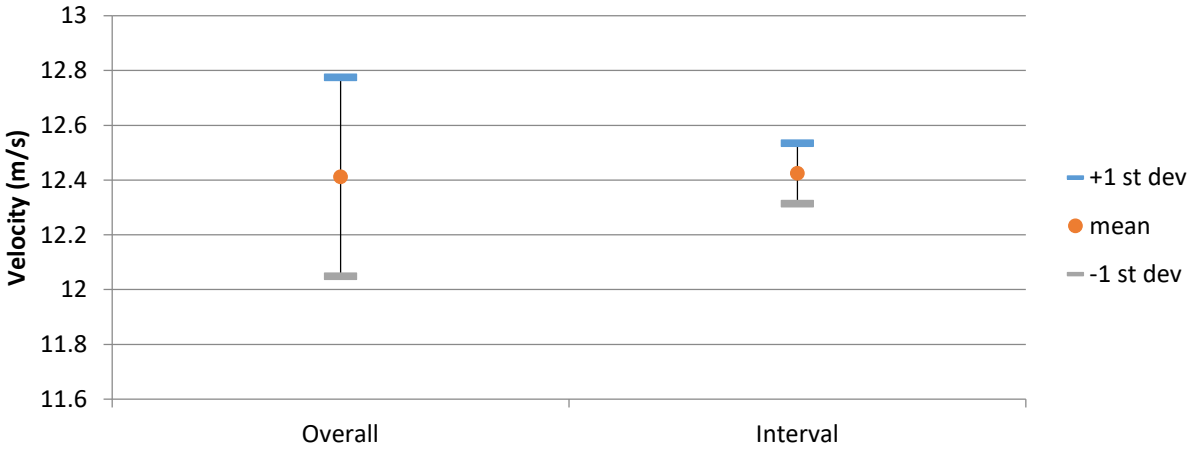
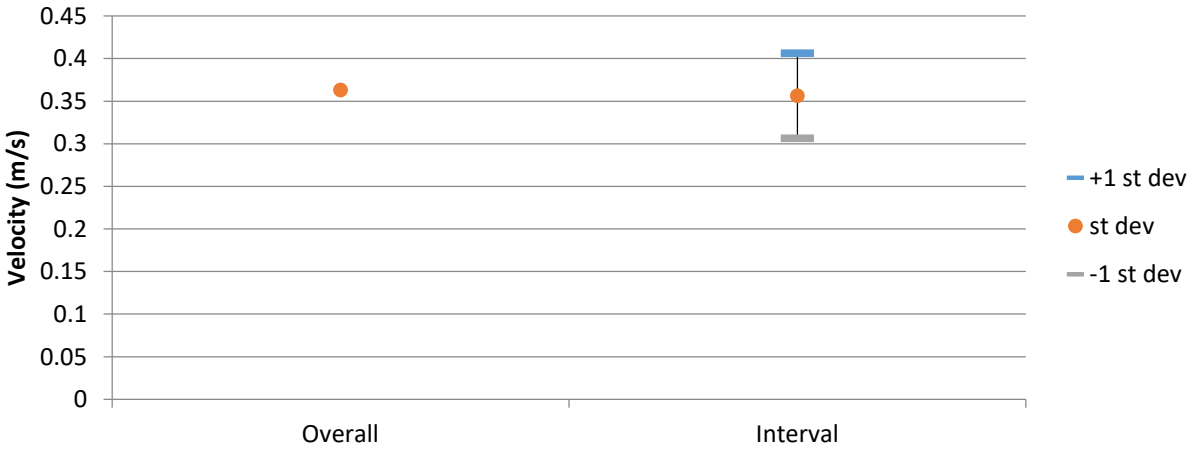


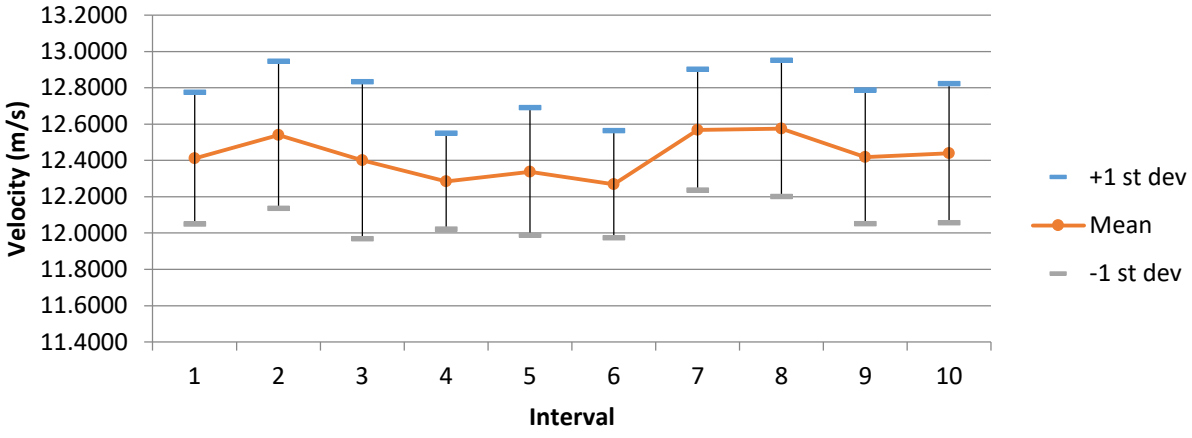
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 264
Blockage Condition: 2D at 4'
Blower Frequency: 50 Hz
Inlet Probe Location: E2
First Sample Date: 23-Aug-13
First Sample Time: 10:30:33.000

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	13.2436	11.3846	12.4841	0.2155
u	12.5000	10.1000	11.5506	0.2756
v	0.7820	-1.6700	-0.3419	0.3386
w	-3.0500	-6.0800	-4.6991	0.3092

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	13.0514	11.3846	12.3245	0.2731	1.5391
2	13.2120	11.8426	12.4958	0.1923	1.6874
3	13.2051	11.6695	12.4789	0.2106	1.5104
4	13.1396	11.8555	12.4862	0.1886	1.5888
5	13.2174	11.6667	12.4601	0.1980	1.5197
6	13.1511	11.8751	12.5094	0.1901	1.7351
7	13.2436	11.4981	12.5601	0.2179	1.6238
8	13.1934	11.8710	12.5104	0.2031	1.5960
9	13.1520	11.8352	12.5086	0.1996	1.4853
10	13.0795	11.8118	12.5074	0.1858	1.6494
		Average	12.4841	0.2059	1.5935
		St Dev	0.0619	0.0257	0.0774

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	11.4121	-0.8952	-4.5413	0.3282	0.2697	0.3564	2.8761	2.3637	3.1232
2	11.6088	-0.3819	-4.5920	0.2395	0.2528	0.2552	2.0631	2.1776	2.1986
3	11.5245	-0.3800	-4.7519	0.2672	0.2820	0.2781	2.3185	2.4471	2.4127
4	11.5700	-0.5097	-4.6555	0.2371	0.2022	0.2129	2.0490	1.7474	1.8400
5	11.6189	-0.4468	-4.4652	0.2462	0.2279	0.2105	2.1193	1.9617	1.8116
6	11.5938	-0.2051	-4.6695	0.2543	0.3009	0.3227	2.1935	2.5951	2.7831
7	11.5118	-0.2618	-4.9977	0.2882	0.2550	0.2988	2.5031	2.2155	2.5955
8	11.4797	0.0255	-4.9565	0.2920	0.2045	0.2681	2.5436	1.7813	2.3352
9	11.5905	-0.1481	-4.6893	0.2691	0.2072	0.1950	2.3220	1.7879	1.6828
10	11.5959	-0.2157	-4.6715	0.2460	0.1874	0.2013	2.1217	1.6158	1.7357

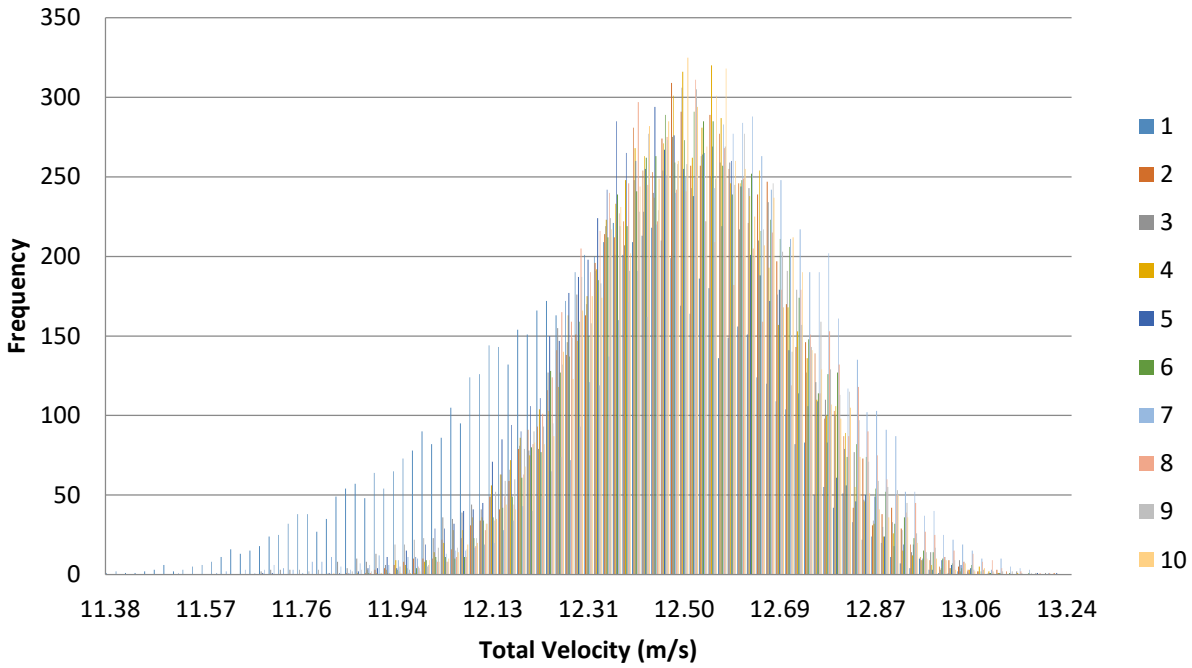


Figure 1. Velocity histogram for each interval (100 bins).

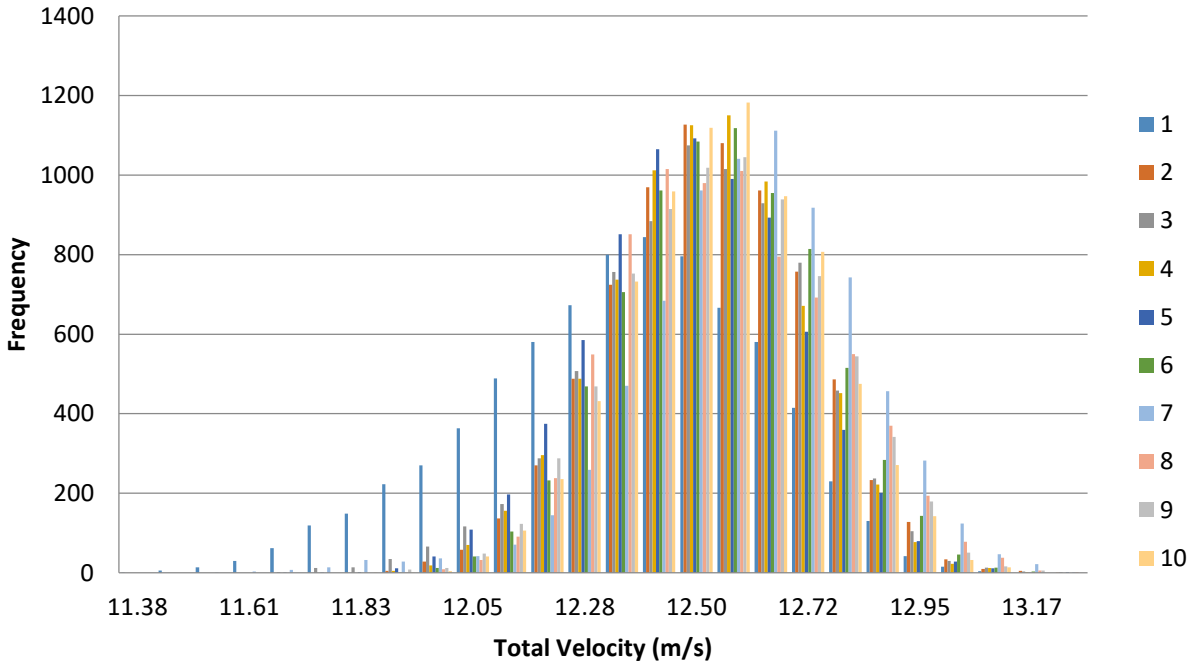
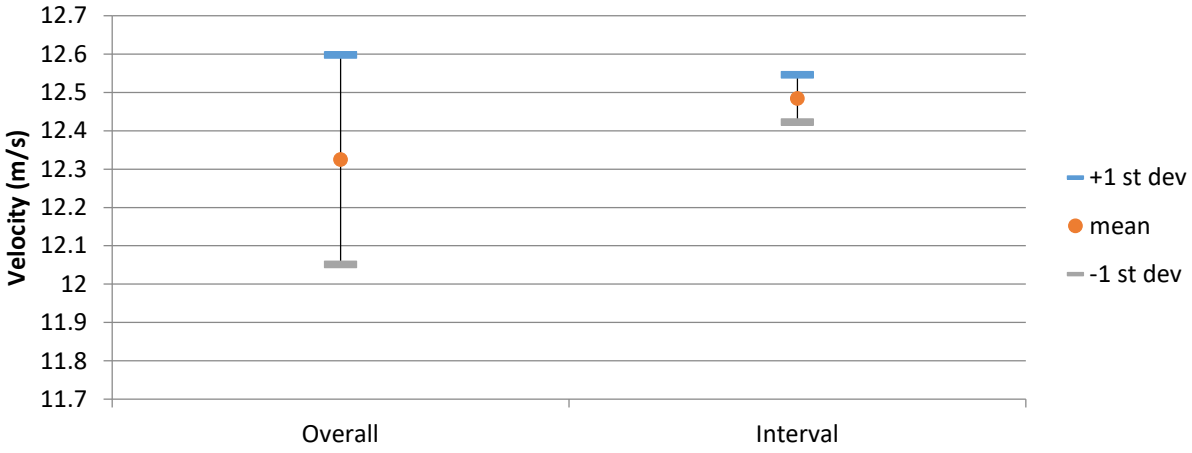
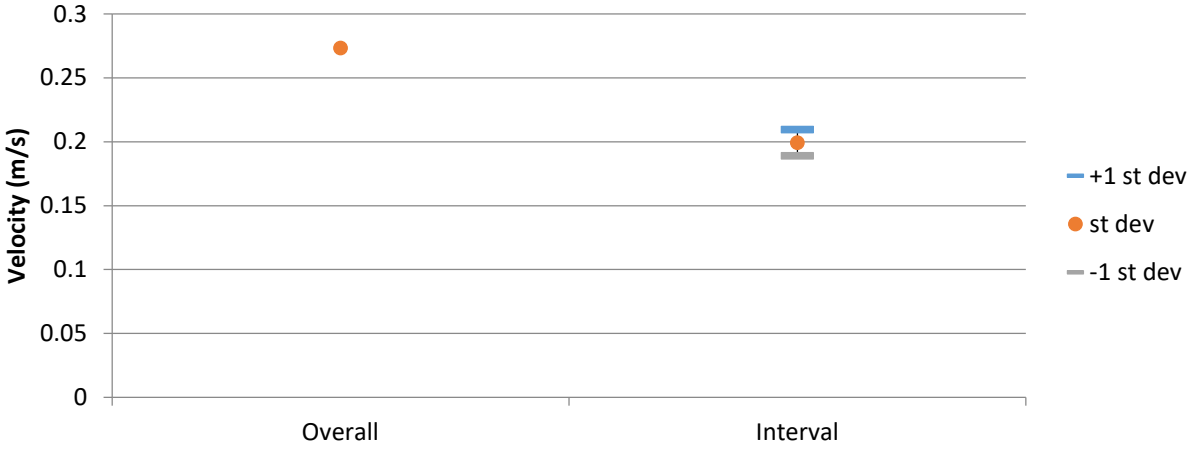


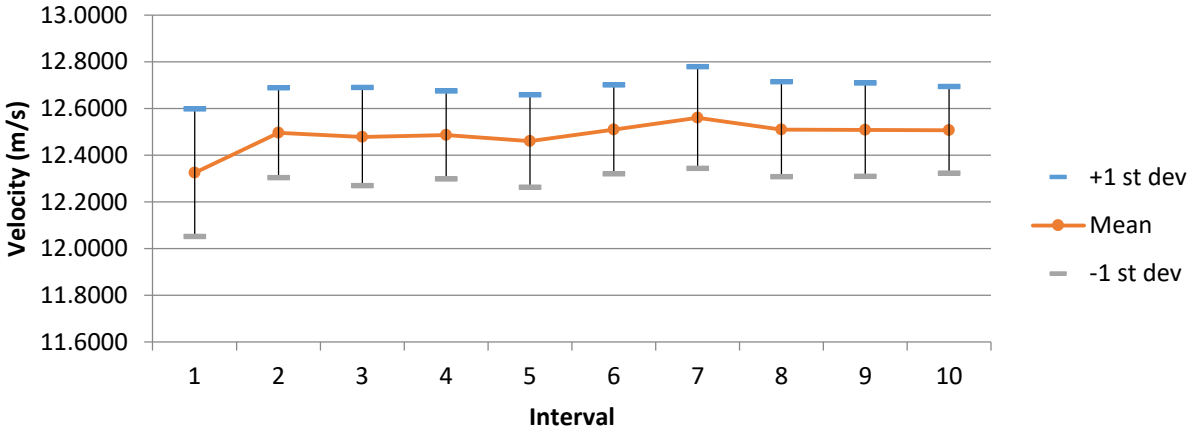
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 265
Blockage Condition: 2D at 4'
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 23-Aug-13
First Sample Time: 10:31:57.281

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.3672	7.9397	10.9211	0.2068
u	12.3000	7.6900	10.6770	0.1999
v	2.2600	-3.2100	-0.7427	0.4283
w	1.7800	-3.3700	-2.0932	0.3985

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.5547	10.3081	10.9928	0.1745	1.5816
2	11.5398	10.1420	10.9388	0.1730	2.2018
3	12.3672	9.0219	10.8891	0.2398	2.1100
4	11.8357	7.9397	10.9229	0.2305	1.6753
5	11.6087	10.1785	10.9413	0.1833	1.8328
6	12.1070	9.5894	10.8923	0.1996	2.0376
7	12.1903	8.6314	10.8860	0.2218	1.8582
8	11.6351	9.8305	10.9468	0.2034	1.8430
9	11.5643	9.4215	10.8873	0.2007	1.8703
10	11.6185	9.3948	10.9135	0.2041	1.8594
		Average	10.9211	0.2031	1.8870
		St Dev	0.0346	0.0226	0.1779

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.6974	-0.6219	-2.4165	0.1649	0.2710	0.3305	1.5413	2.5329	3.0899
2	10.7009	-0.5072	-2.1759	0.1691	0.2829	0.2770	1.5801	2.6436	2.5887
3	10.7123	-0.3175	-1.8354	0.2321	0.4088	0.4304	2.1670	3.8163	4.0177
4	10.6826	-0.7269	-2.0874	0.2198	0.3201	0.4585	2.0574	2.9965	4.2917
5	10.6993	-0.6464	-2.1622	0.1778	0.2512	0.2859	1.6613	2.3474	2.6722
6	10.6795	-0.6747	-1.9593	0.1997	0.4437	0.3156	1.8697	4.1543	2.9548
7	10.6706	-0.8241	-1.9059	0.2158	0.3823	0.4329	2.0225	3.5823	4.0569
8	10.7012	-0.7293	-2.1312	0.1987	0.3665	0.3311	1.8564	3.4249	3.0937
9	10.6261	-1.0118	-2.0878	0.1920	0.2701	0.4082	1.8073	2.5416	3.8410
10	10.5994	-1.3671	-2.1703	0.1877	0.2527	0.3450	1.7704	2.3842	3.2552

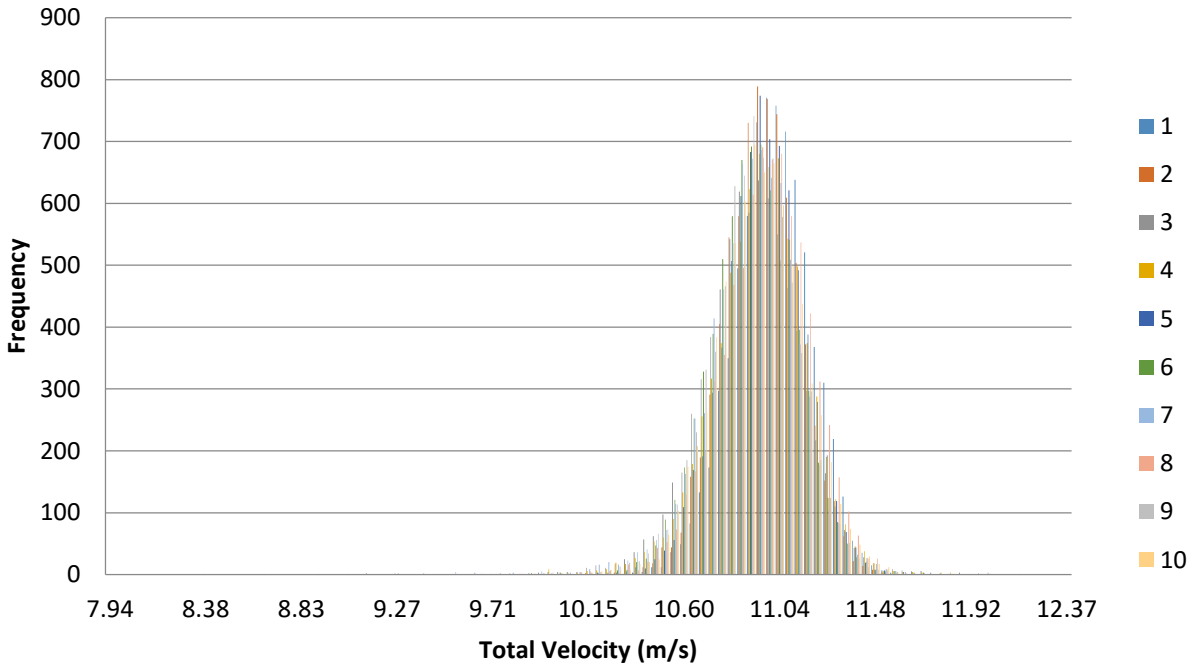


Figure 1. Velocity histogram for each interval (100 bins).

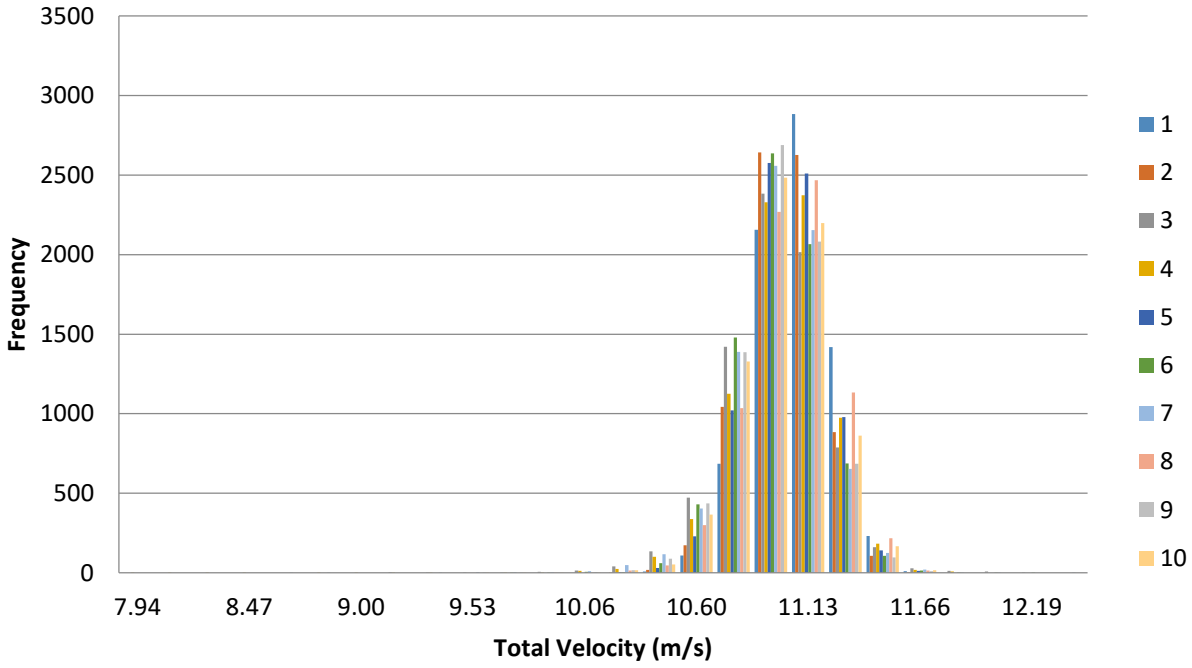
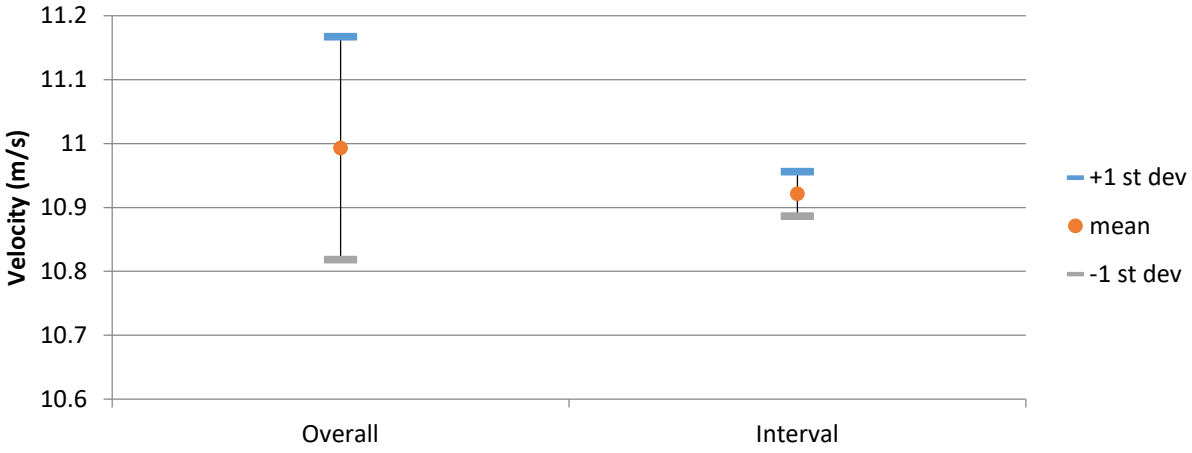
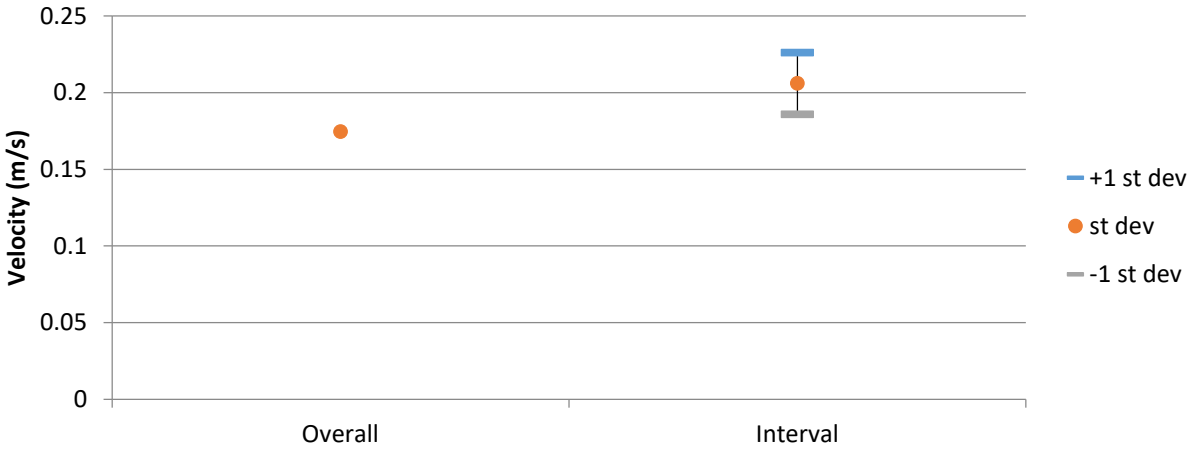


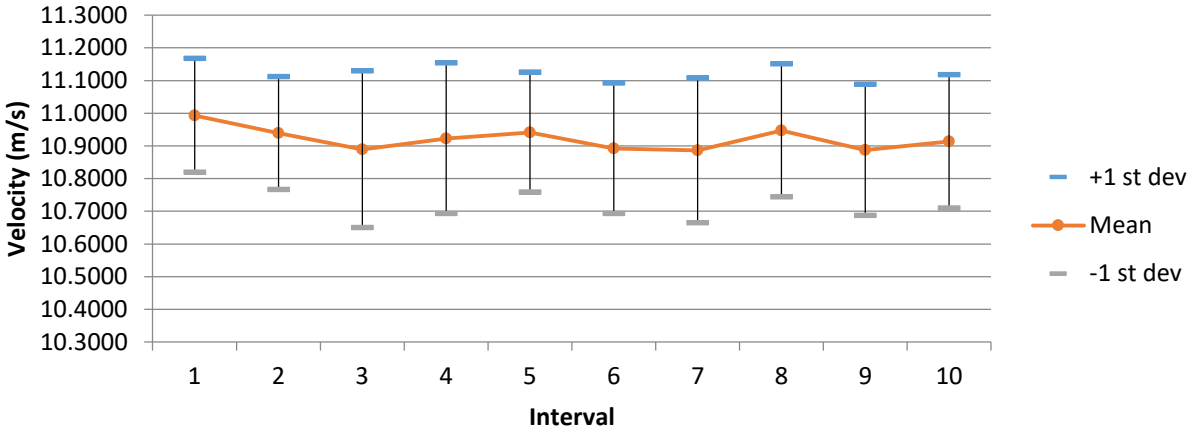
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 266
Blockage Condition: 2D at 4'
Blower Frequency: 50 Hz
Inlet Probe Location: E4
First Sample Date: 23-Aug-13
First Sample Time: 10:33:18.890

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	17.8538	6.3836	10.7430	0.7261
u	17.6000	4.8300	10.2972	0.8095
v	6.2400	-8.4100	-0.5378	1.4561
w	8.0300	-6.1500	0.5395	2.5598

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	14.2401	7.2797	10.6834	0.7482	7.3820
2	14.3926	7.4436	10.6465	0.7859	7.5860
3	17.8538	6.9257	10.6789	0.8101	6.9349
4	14.9305	7.3421	10.8121	0.7498	6.8746
5	14.2300	7.3151	10.7008	0.7356	7.2248
6	15.2308	6.3836	10.6955	0.7727	5.7368
7	14.5709	7.8680	10.8610	0.6231	4.9205
8	13.0695	8.1634	10.6752	0.5253	5.8325
9	14.2836	7.3894	10.8856	0.6349	7.2094
10	14.7947	6.5012	10.7913	0.7780	6.6682
		Average	10.7430	0.7164	6.6370
		St Dev	0.0863	0.0913	0.8173

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.8854	-1.1590	3.3025	0.8414	1.3087	1.5180	8.5119	13.2385	15.3556
2	10.0608	-1.3842	1.8615	0.8520	1.2977	2.2259	8.4680	12.8983	22.1241
3	10.1754	-0.9240	0.6789	0.8592	1.3728	2.6870	8.4436	13.4914	26.4068
4	10.5243	-0.9055	-0.0980	0.7609	1.2067	1.9597	7.2299	11.4655	18.6211
5	10.4967	-0.1159	0.0082	0.7427	1.0576	1.7845	7.0752	10.0751	17.0003
6	10.1511	-0.6533	2.2609	0.8746	1.5500	1.8001	8.6155	15.2688	17.7334
7	10.5786	0.9587	-1.7702	0.6149	0.9292	1.0723	5.8125	8.7835	10.1364
8	10.4558	0.6139	-1.7140	0.5056	0.9234	0.6995	4.8359	8.8313	6.6903
9	10.5718	-0.2638	-1.9071	0.6214	1.1203	1.3373	5.8775	10.5973	12.6496
10	10.0720	-1.5444	2.7720	0.9393	1.3200	1.7081	9.3262	13.1060	16.9589

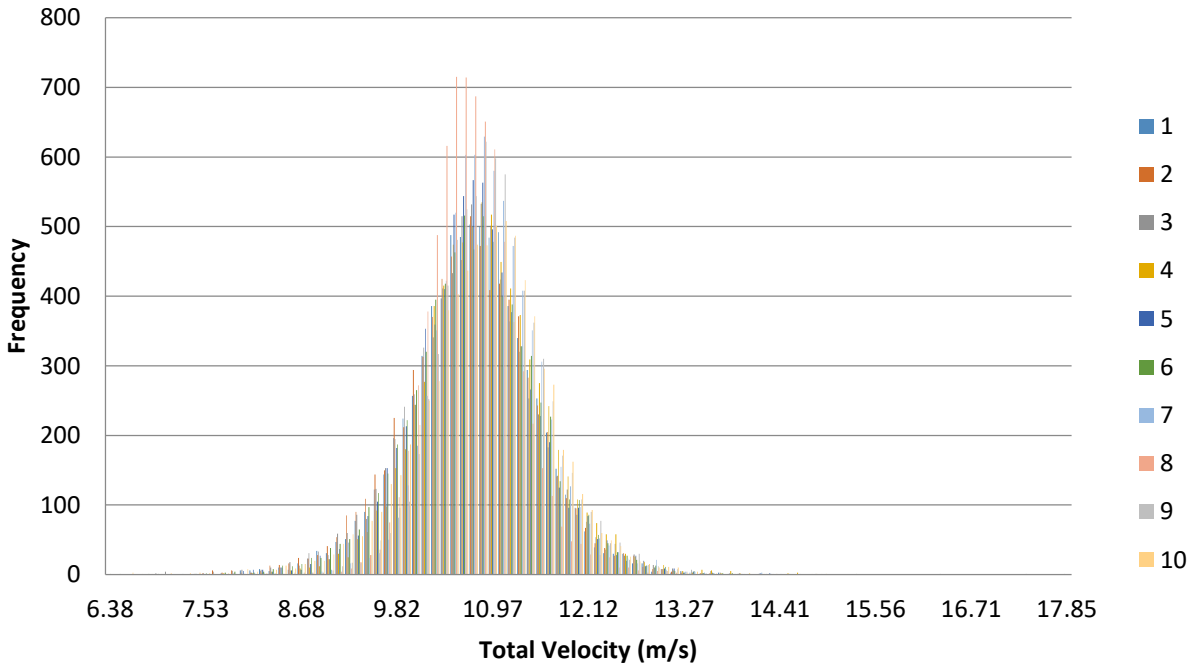


Figure 1. Velocity histogram for each interval (100 bins).

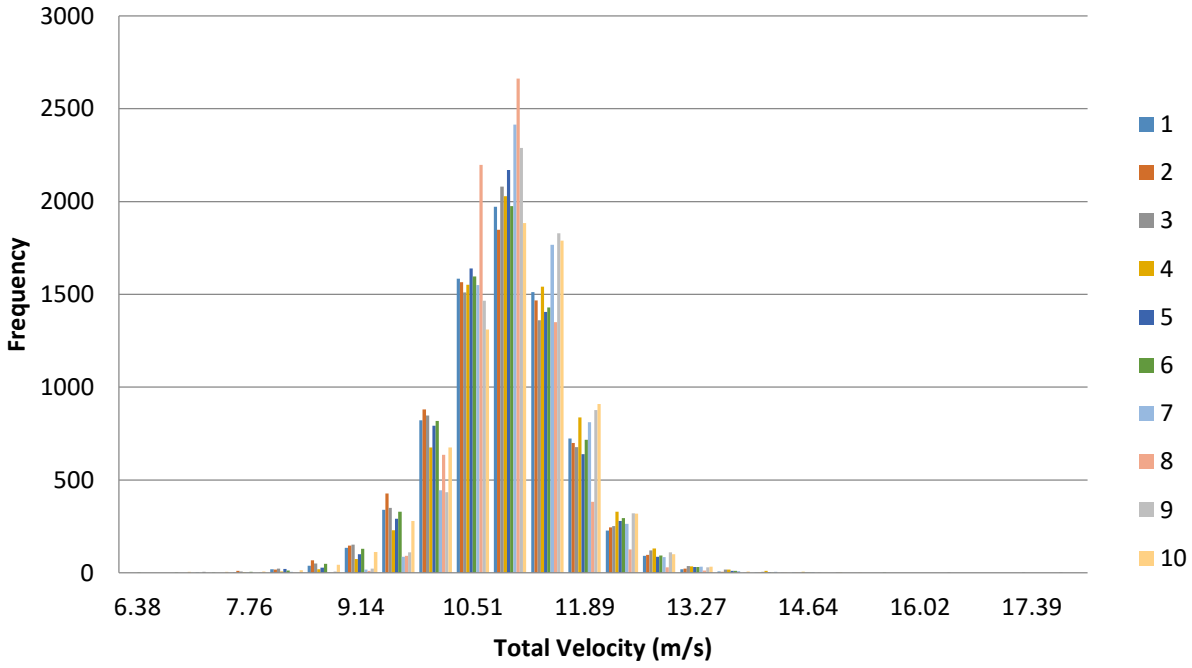
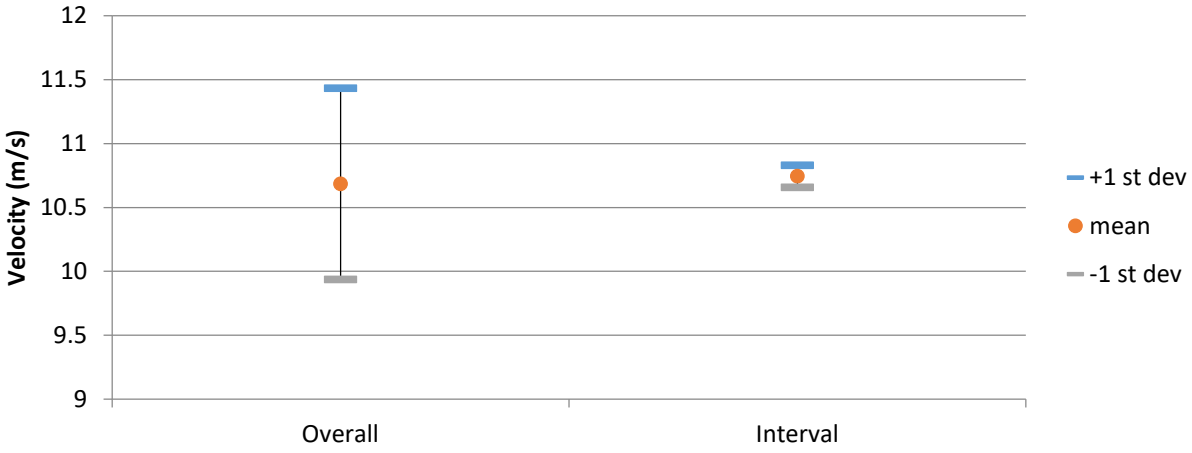
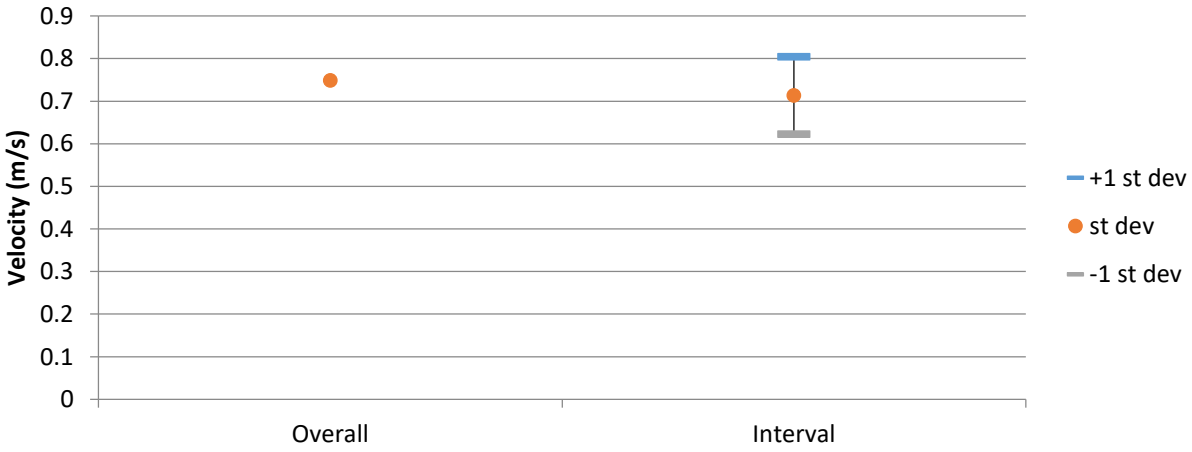


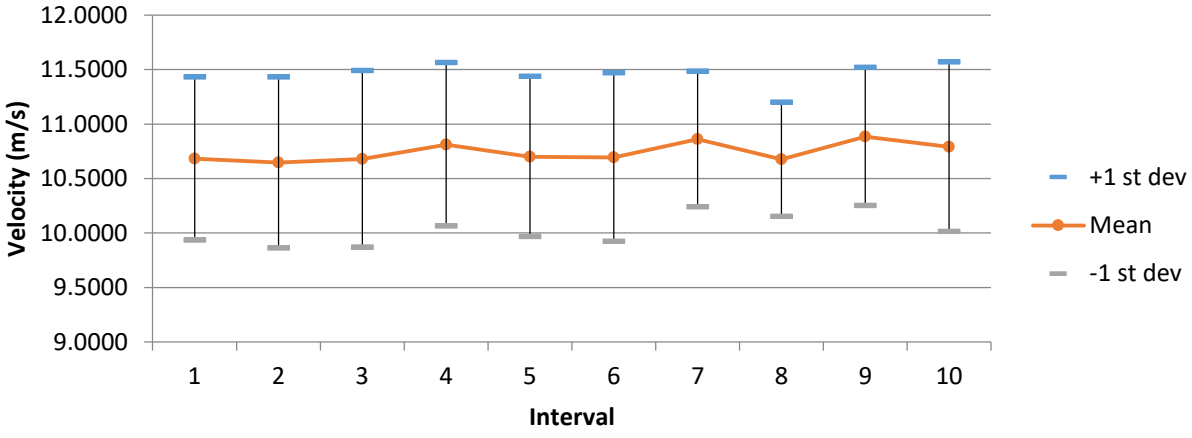
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 267
Blockage Condition: 2D at 4'
Blower Frequency: 50 Hz
Inlet Probe Location: E5
First Sample Date: 23-Aug-13
First Sample Time: 10:34:39.375

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	14.3892	4.9370	10.1819	0.4901
u	14.2000	4.1300	10.0346	0.5048
v	4.0200	-6.1800	0.7847	0.8410
w	5.6100	-4.9800	0.1753	1.2687

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	14.3892	7.6886	10.2272	0.5189	5.5214
2	12.9703	6.5623	10.1087	0.5581	4.8094
3	12.7168	7.9263	10.1580	0.4885	5.5729
4	12.6036	5.0411	10.1317	0.5646	4.5207
5	13.0822	7.7867	10.1584	0.4592	4.6972
6	12.9625	4.9370	10.0361	0.4714	4.9075
7	12.5524	7.2157	10.1945	0.5003	3.9190
8	12.8918	7.7248	10.2846	0.4031	4.8275
9	13.2307	7.8296	10.2345	0.4941	3.3240
10	12.1492	8.0795	10.2857	0.3419	4.7144
		Average	10.1819	0.4800	4.6814
		St Dev	0.0793	0.0675	0.6356

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.0746	0.8641	0.7919	0.5337	0.6839	1.1140	5.2979	6.7887	11.0578
2	9.9094	0.3526	1.2975	0.6045	1.1217	0.9331	6.1007	11.3199	9.4164
3	10.0267	0.8583	0.6458	0.5034	0.6076	1.0551	5.0203	6.0595	10.5229
4	9.9532	0.6502	0.6943	0.5927	0.9949	1.2880	5.9550	9.9954	12.9411
5	10.0008	0.9129	0.1641	0.4726	0.8275	1.2724	4.7261	8.2742	12.7229
6	9.9329	0.7523	0.4405	0.4894	0.7848	0.8172	4.9270	7.9010	8.2272
7	10.0412	1.0055	-0.2113	0.4844	0.8021	1.1915	4.8241	7.9884	11.8661
8	10.1550	0.7543	-1.0499	0.4008	0.6873	0.7125	3.9469	6.7678	7.0164
9	10.0840	1.1399	0.1690	0.4942	0.8428	1.0091	4.9009	8.3581	10.0072
10	10.1685	0.5575	-1.1885	0.3474	0.6333	0.5185	3.4164	6.2282	5.0990

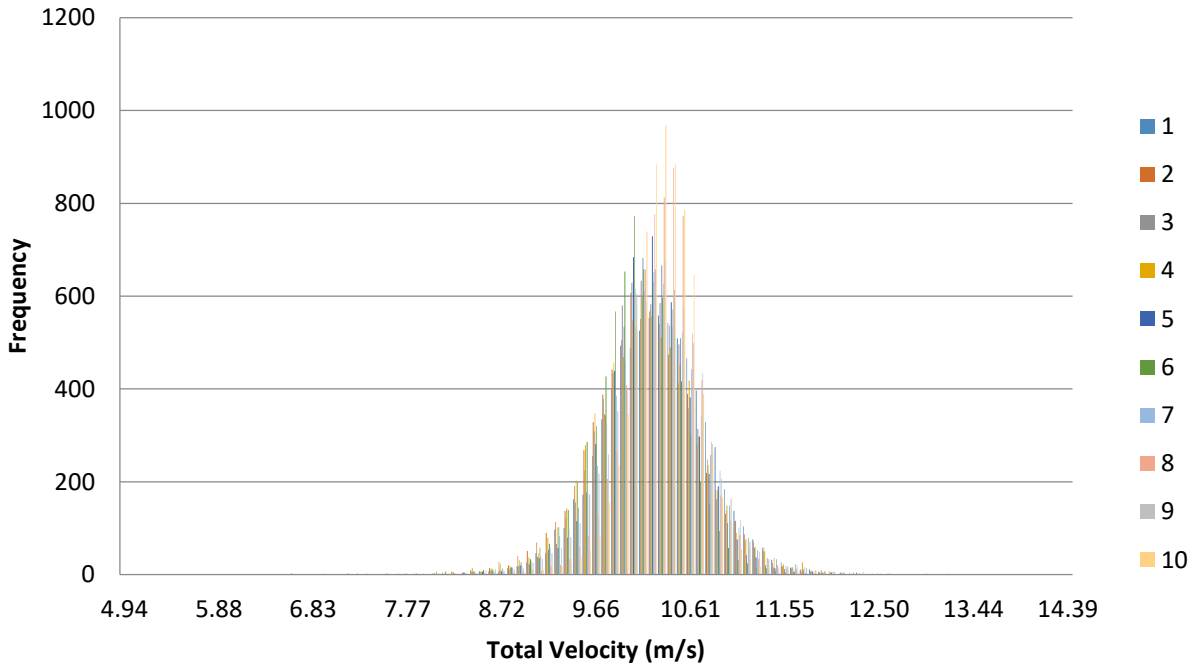


Figure 1. Velocity histogram for each interval (100 bins).

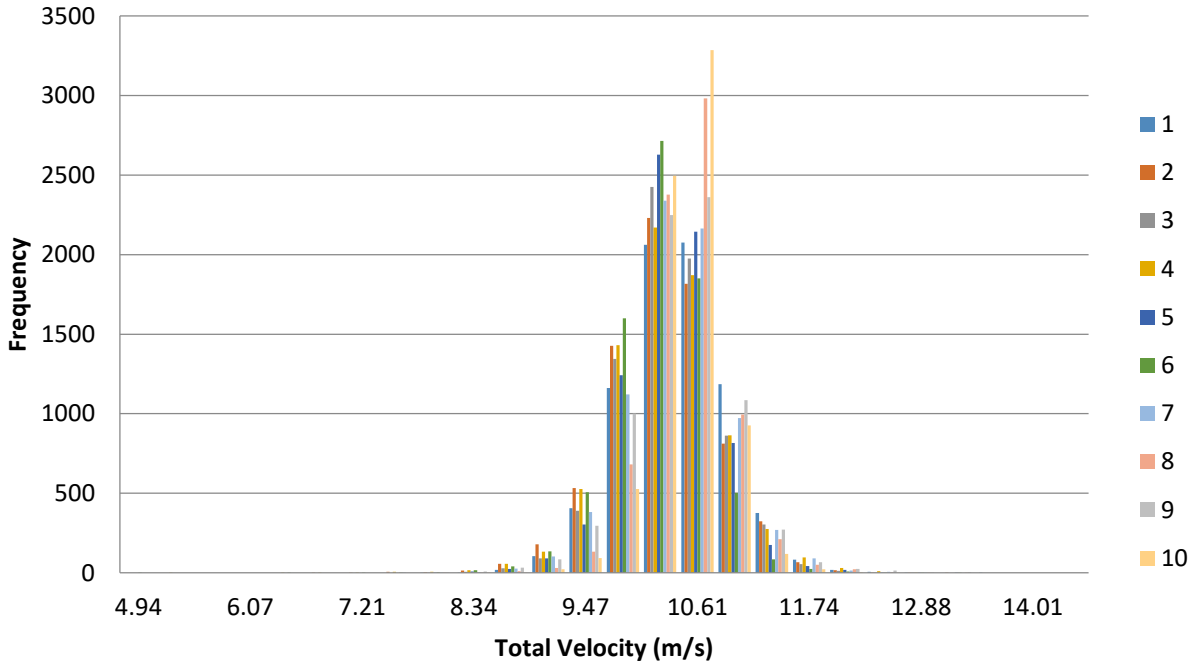
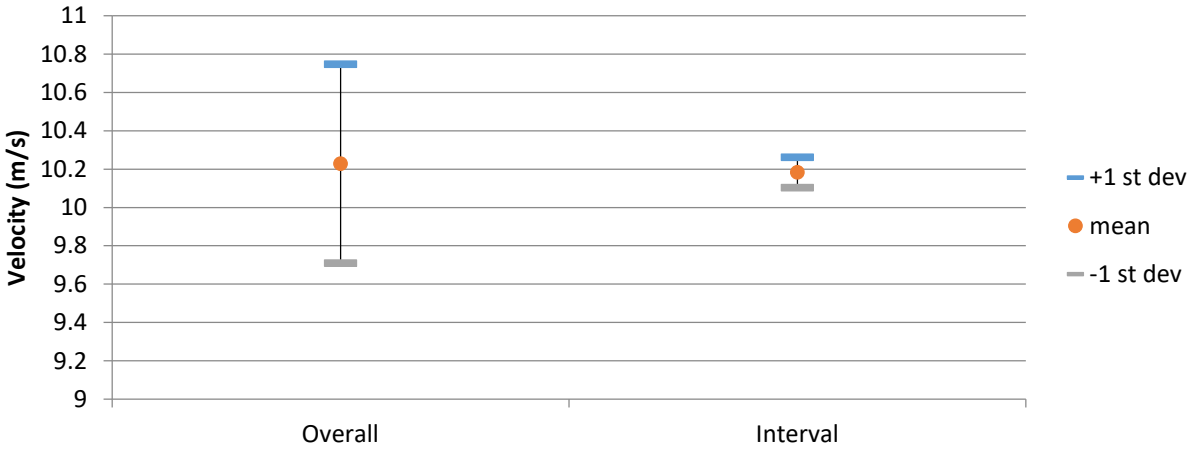
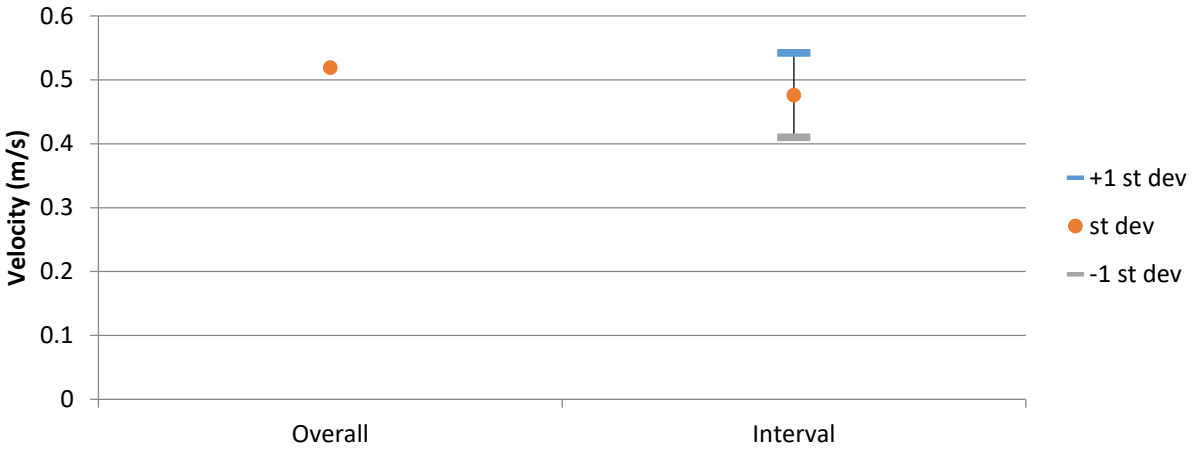


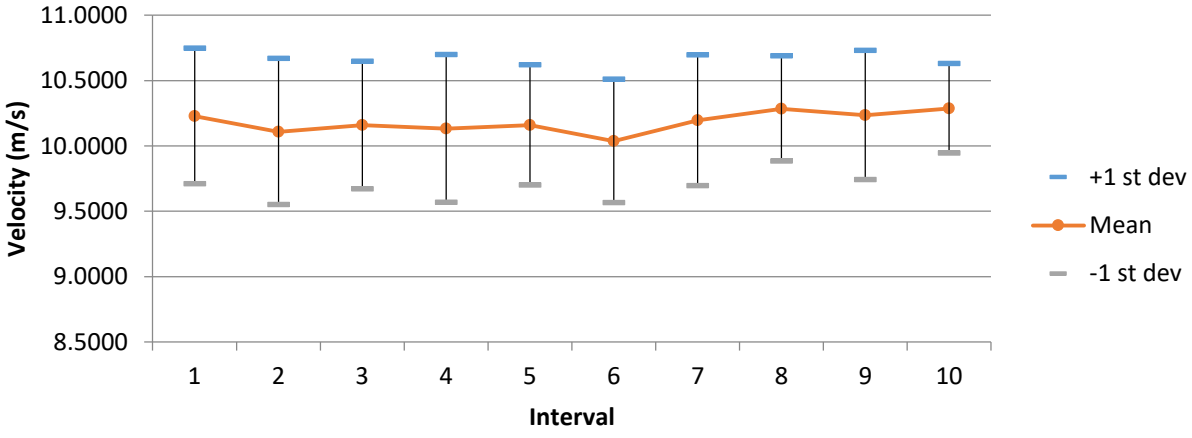
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 268
Blockage Condition: 2D at 8'
Blower Frequency: 50 Hz
Inlet Probe Location: E5
First Sample Date: 23-Aug-13
First Sample Time: 10:39:10.875

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	11.9335	8.3452	10.2273	0.2723
u	11.9000	8.0000	10.0286	0.2834
v	1.6900	-4.5800	-1.5647	0.8136
w	2.9500	-3.8800	-0.4812	0.8219

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.5198	8.9489	10.2736	0.2424	2.0718
2	10.9763	9.3857	10.2303	0.2119	2.0432
3	11.0979	9.3474	10.2177	0.2088	2.7059
4	11.7172	8.5534	10.2355	0.2770	3.4009
5	11.6827	8.3452	10.1717	0.3459	3.2178
6	11.9335	8.7327	10.2181	0.3288	2.9881
7	11.7934	8.6391	10.1952	0.3046	3.0949
8	11.6833	8.7513	10.2757	0.3180	2.0021
9	11.0105	9.5377	10.2273	0.2048	2.0748
10	10.9259	9.4884	10.2277	0.2122	2.5955
		Average	10.2273	0.2654	2.6195
		St Dev	0.0314	0.0558	0.5146

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.9962	-2.1463	-0.8635	0.2330	0.3382	0.3991	2.3305	3.3837	3.9924
2	9.9161	-2.3171	-0.8117	0.2295	0.4889	0.2347	2.3146	4.9303	2.3672
3	9.9253	-2.2857	-0.7503	0.2054	0.2334	0.2224	2.0697	2.3513	2.2407
4	9.9965	-1.8522	-0.2367	0.2777	0.7207	0.9099	2.7782	7.2099	9.1019
5	10.0259	-1.1739	0.8015	0.3551	0.6989	0.6554	3.5423	6.9712	6.5366
6	10.0263	-1.5559	0.0341	0.3362	0.7176	0.9700	3.3532	7.1571	9.6745
7	9.9882	-1.7593	-0.2910	0.3040	0.6197	0.7837	3.0431	6.2039	7.8462
8	10.1676	-0.4734	-0.7274	0.3107	0.8623	0.8480	3.0563	8.4809	8.3404
9	10.1326	-0.9237	-0.9895	0.2033	0.2470	0.1851	2.0064	2.4379	1.8266
10	10.1116	-1.1596	-0.9774	0.2090	0.1899	0.1626	2.0665	1.8776	1.6082

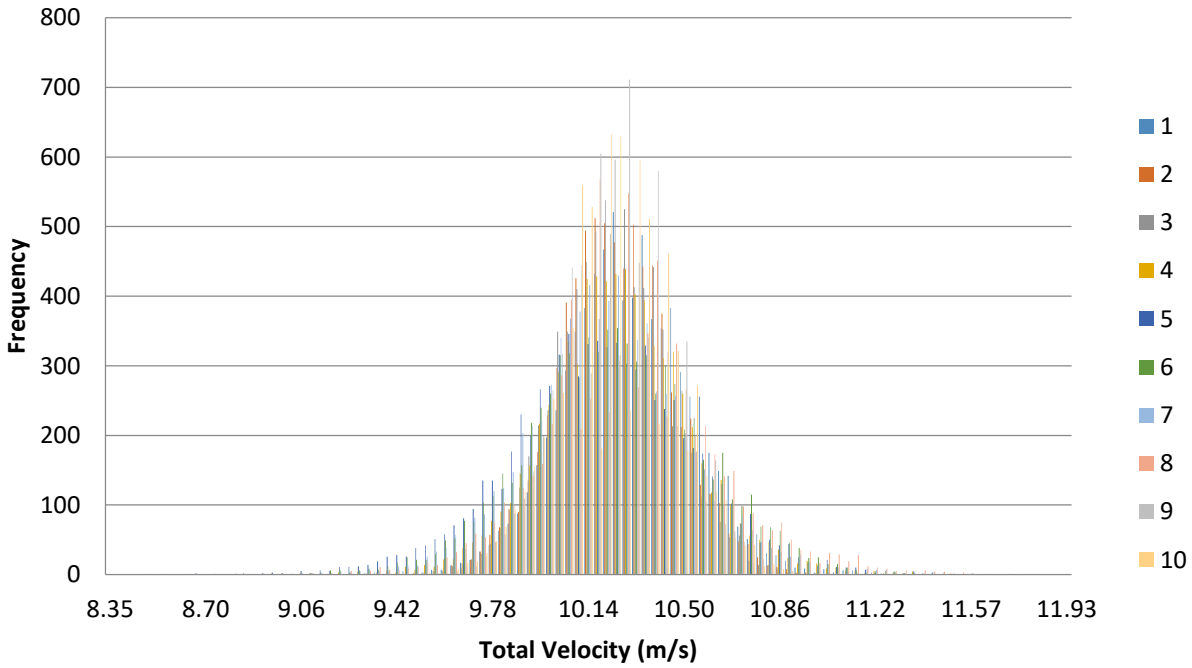


Figure 1. Velocity histogram for each interval (100 bins).

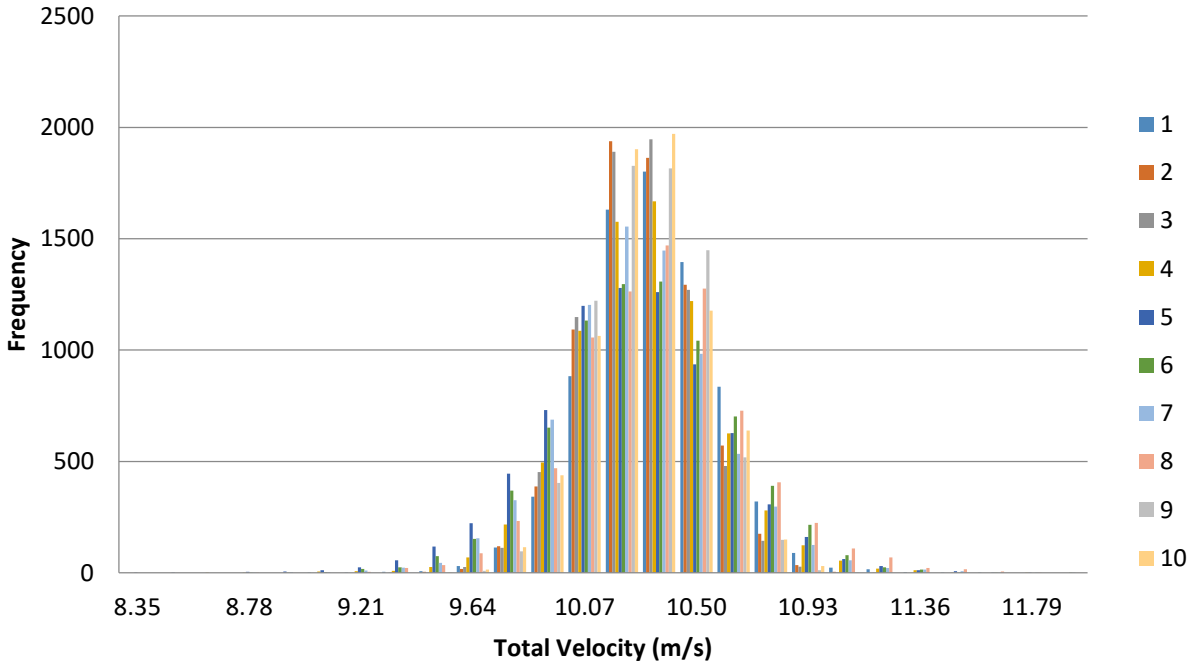
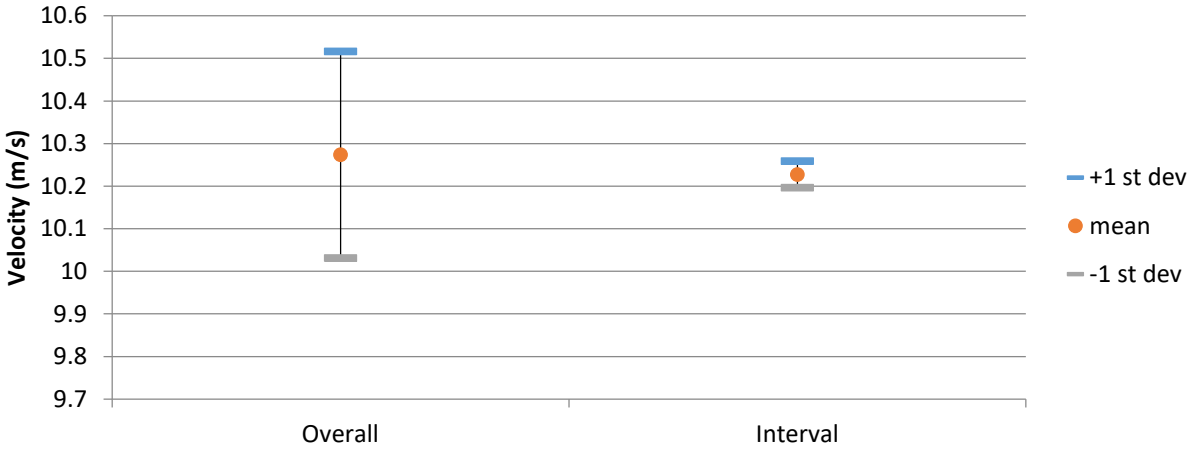
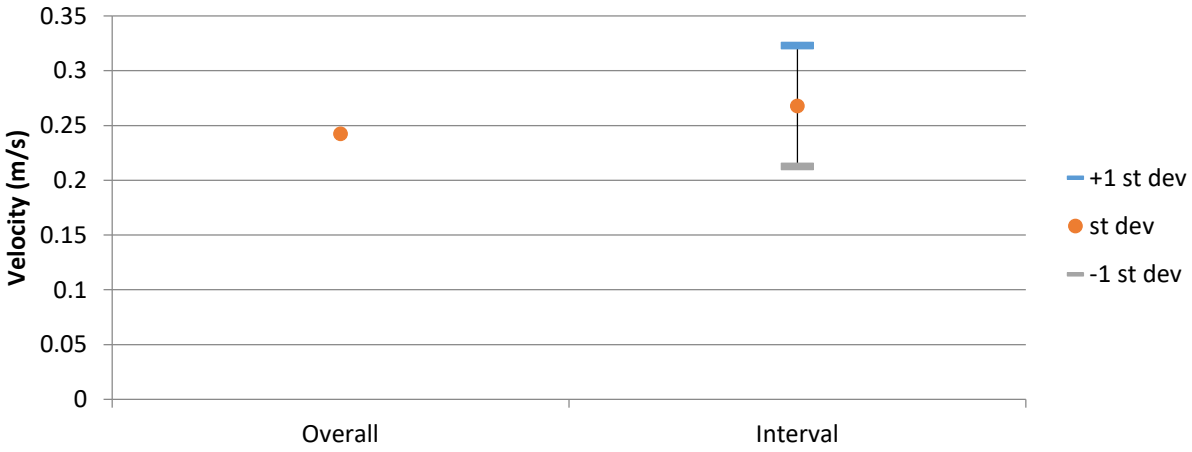


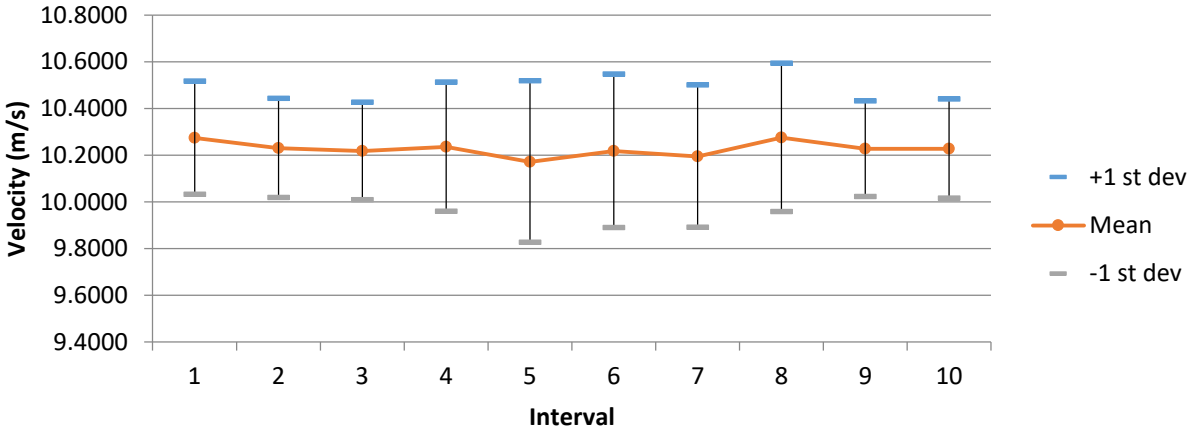
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 269
Blockage Condition: 2D at 8'
Blower Frequency: 50 Hz
Inlet Probe Location: E4
First Sample Date: 23-Aug-13
First Sample Time: 10:41:05.546

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.5980	8.5413	10.4653	0.3992
u	12.0000	8.2700	10.3056	0.3781
v	3.4600	-3.6800	-0.2984	1.0729
w	3.4000	-4.7100	-0.5805	1.3256

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.3164	9.4063	10.4224	0.2848	3.1620
2	11.6242	9.1565	10.4029	0.3289	3.6090
3	11.8530	8.6234	10.3567	0.3738	3.5674
4	11.9222	8.5497	10.4388	0.3724	2.4136
5	11.3354	9.5887	10.5552	0.2548	3.8774
6	12.5980	9.7276	10.8787	0.4218	3.0982
7	11.8552	9.5568	10.6706	0.3306	3.2186
8	11.5129	8.8677	10.2863	0.3311	4.0338
9	12.0441	8.5413	10.2039	0.4116	3.7621
10	11.8684	8.8282	10.4377	0.3927	3.3467
		Average	10.4653	0.3502	3.4089
		St Dev	0.1945	0.0541	0.4459

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.3395	-0.1519	-1.2521	0.2917	0.2825	0.2147	2.8208	2.7323	2.0769
2	10.2809	-0.5132	-1.3068	0.3372	0.5744	0.4662	3.2799	5.5868	4.5345
3	10.2439	-0.1550	-0.0056	0.3826	0.6363	1.3744	3.7352	6.2117	13.4164
4	10.3313	-0.4144	-0.5258	0.3952	0.8832	0.9941	3.8249	8.5489	9.6224
5	10.3095	1.1908	-1.7205	0.2867	0.5510	0.6532	2.7805	5.3441	6.3363
6	10.5171	-0.2220	-2.1294	0.3834	1.3504	1.1664	3.6451	12.8396	11.0901
7	10.5078	-1.6645	0.4174	0.3089	0.5446	0.4690	2.9401	5.1827	4.4634
8	10.1308	-1.4040	-0.0808	0.3337	0.6880	0.8493	3.2935	6.7914	8.3836
9	10.1078	0.0045	0.8906	0.4144	0.6910	0.8230	4.0998	6.8365	8.1423
10	10.2871	0.3454	-0.0913	0.3982	0.7894	1.5382	3.8710	7.6740	14.9528

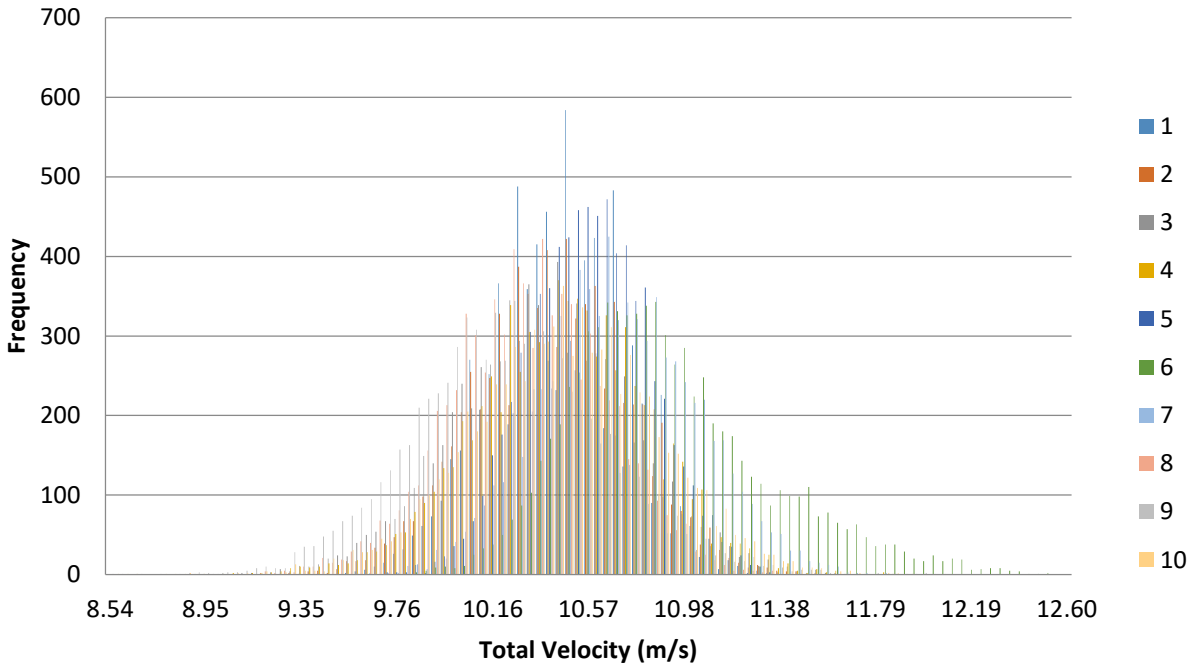


Figure 1. Velocity histogram for each interval (100 bins).

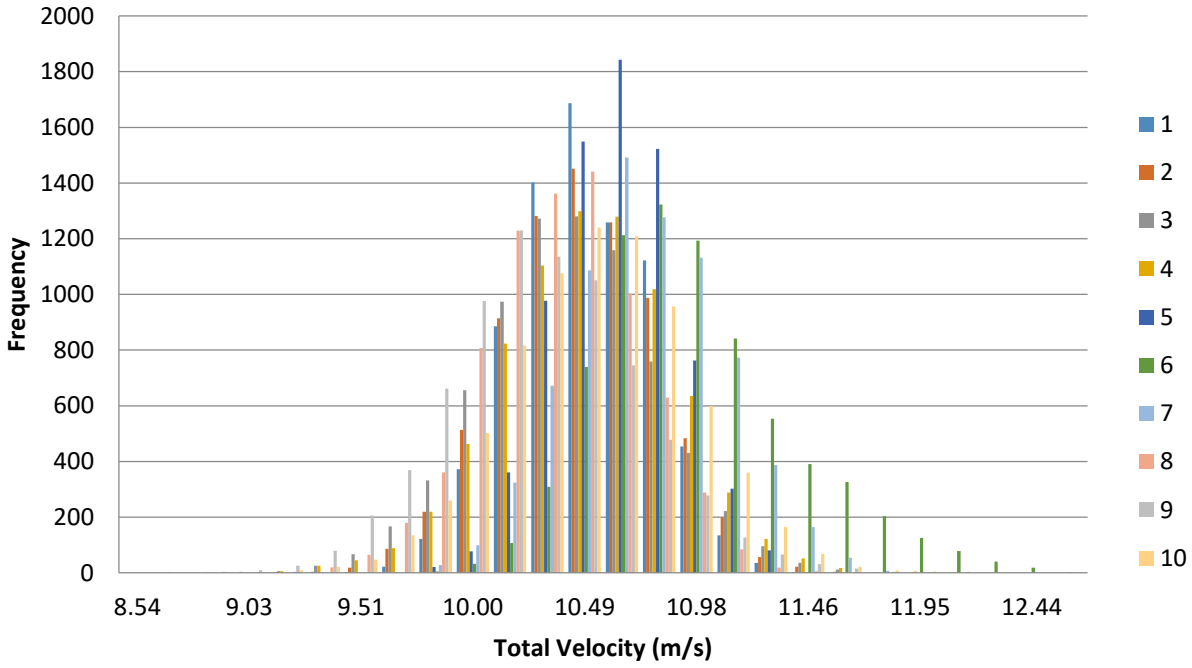
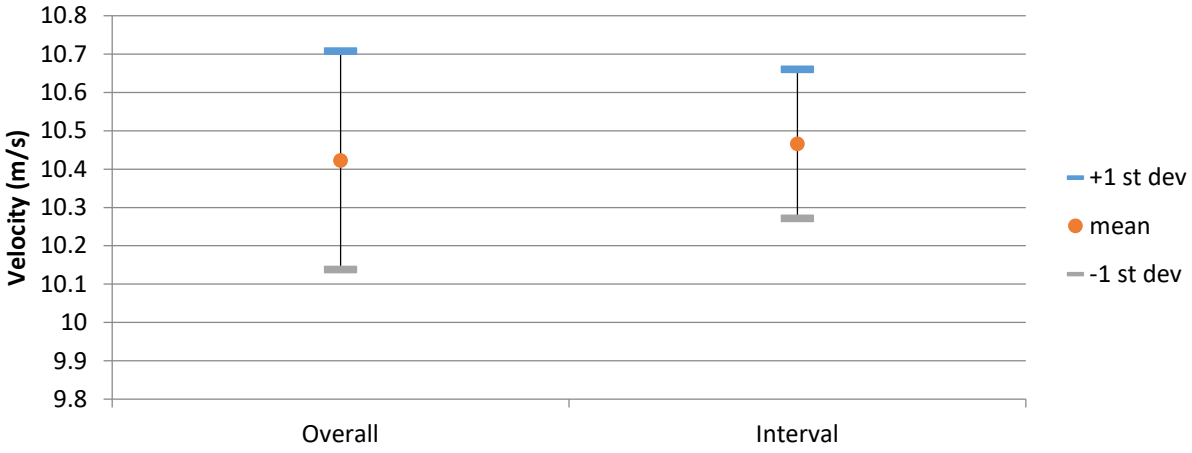
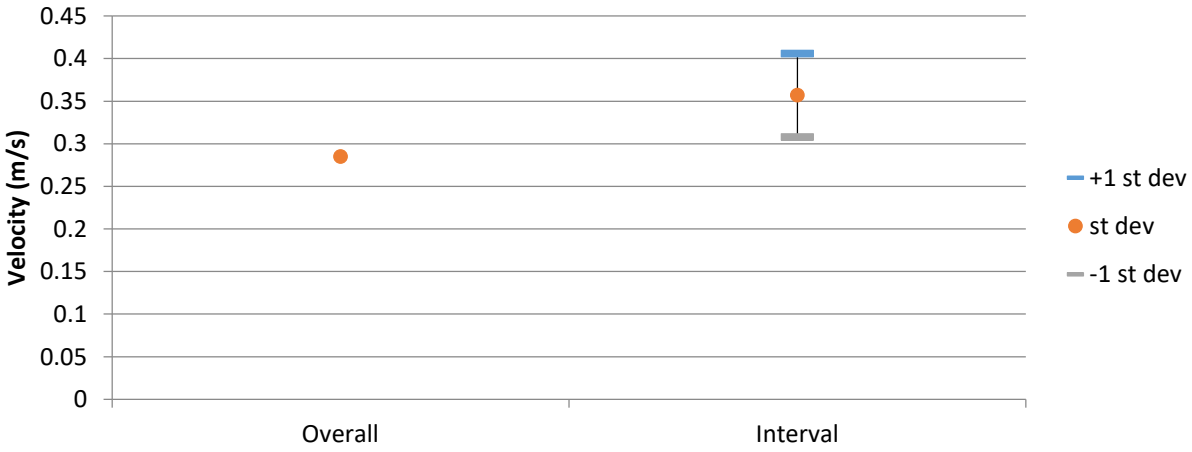


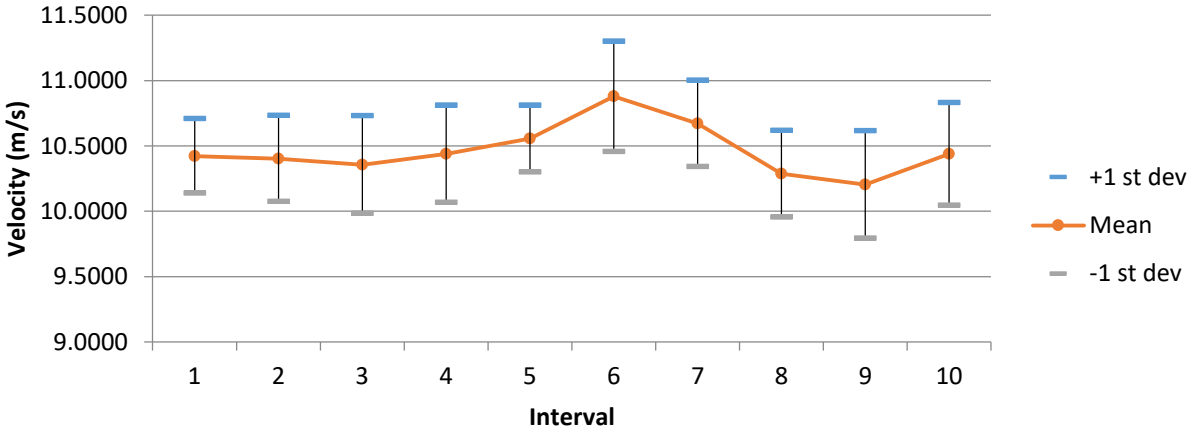
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 270
Blockage Condition: 2D at 8'
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 23-Aug-13
First Sample Time: 10:42:35.734

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	12.6389	10.2321	11.0321	0.2585
u	12.3000	8.7100	10.6000	0.3949
v	1.3400	-2.5300	-0.6311	0.5668
w	0.5550	-6.3700	-2.7121	1.0878

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	12.4532	10.2721	11.0869	0.3427	4.0135
2	12.6389	10.3807	11.2444	0.4513	1.9855
3	11.8847	10.2860	11.0368	0.2191	1.5270
4	11.5383	10.3943	10.9741	0.1676	1.6097
5	11.5962	10.3016	10.9064	0.1756	1.6588
6	11.7401	10.3453	10.9926	0.1823	1.5130
7	11.6634	10.3908	11.0021	0.1665	1.7367
8	11.6853	10.2321	11.0135	0.1913	1.6805
9	11.6434	10.3206	11.0184	0.1852	1.7716
10	11.7320	10.3356	11.0455	0.1957	2.0642
		Average	11.0321	0.2277	1.9561
		St Dev	0.0885	0.0940	0.7066

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.9043	-0.1308	-4.8610	0.4903	0.4209	0.9364	4.9500	4.2496	9.4548
2	11.1062	-0.4935	-1.3153	0.3876	0.6413	0.8694	3.4896	5.7742	7.8284
3	10.7577	-0.9161	-2.0322	0.2804	0.5598	0.8778	2.6067	5.2041	8.1594
4	10.5756	-1.0966	-2.6765	0.1631	0.3416	0.3247	1.5426	3.2300	3.0702
5	10.5725	-1.1847	-2.3348	0.1779	0.3054	0.4719	1.6831	2.8890	4.4638
6	10.5899	-0.6397	-2.7965	0.2012	0.3135	0.5957	1.9000	2.9604	5.6251
7	10.6139	-0.7346	-2.7484	0.1681	0.3373	0.4297	1.5836	3.1780	4.0486
8	10.4668	-0.7143	-3.2650	0.2720	0.5059	0.5287	2.5988	4.8338	5.0509
9	10.6573	0.0042	-2.6914	0.2104	0.4256	0.6273	1.9741	3.9930	5.8859
10	10.7555	-0.4045	-2.3995	0.1812	0.3244	0.5487	1.6846	3.0157	5.1013

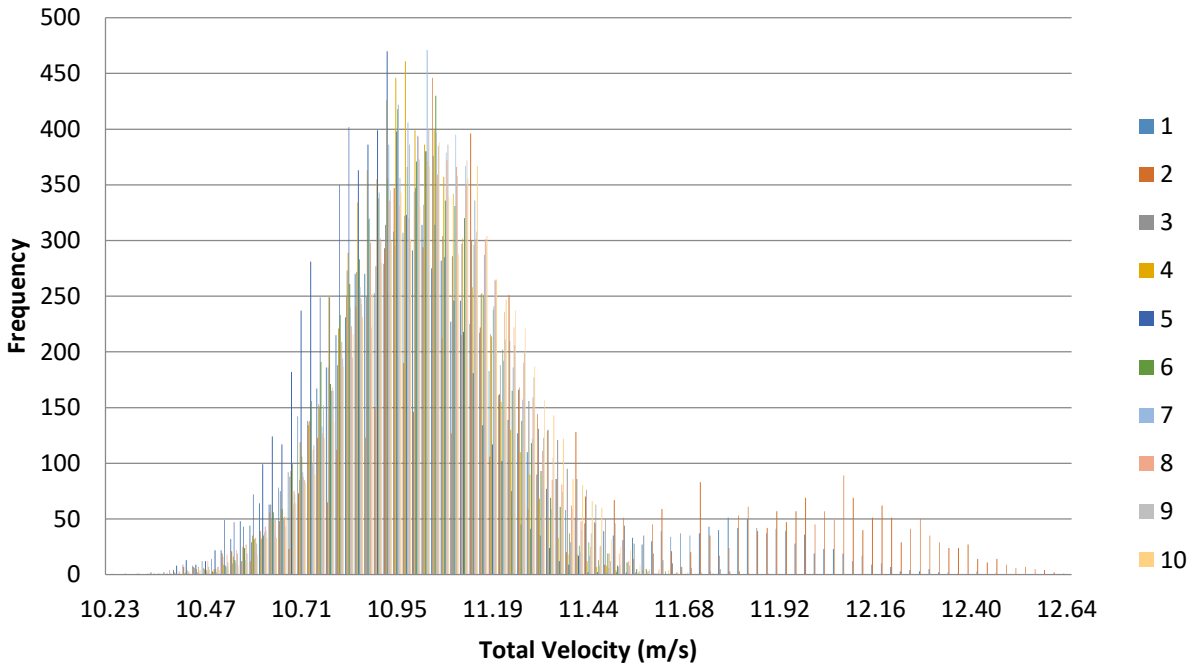


Figure 1. Velocity histogram for each interval (100 bins).

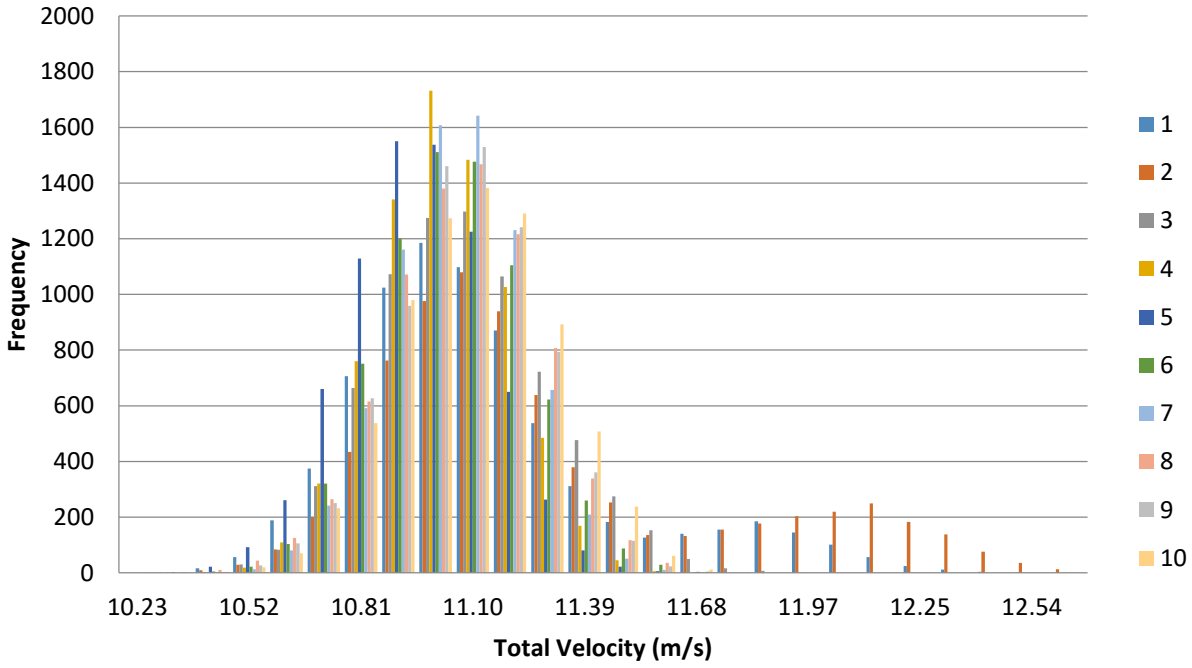
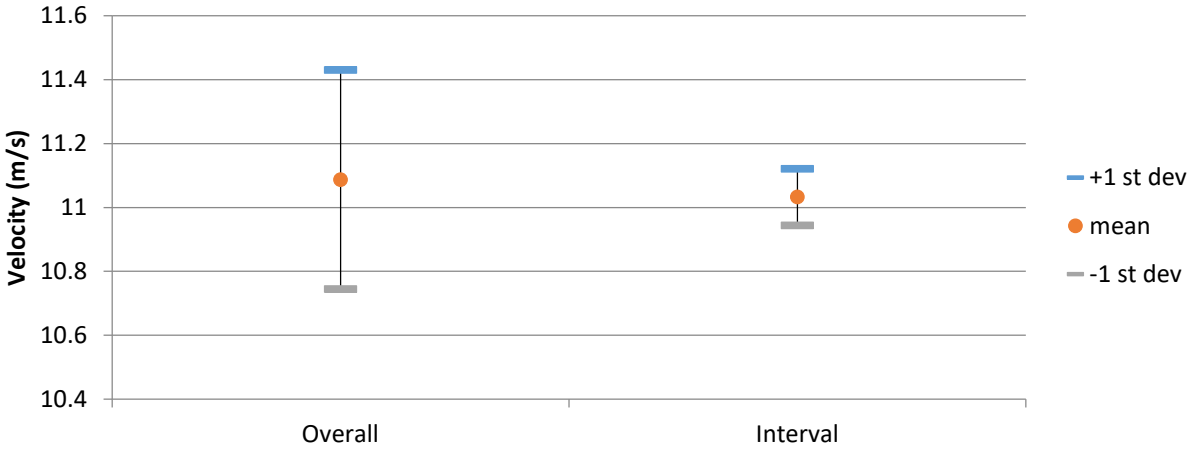
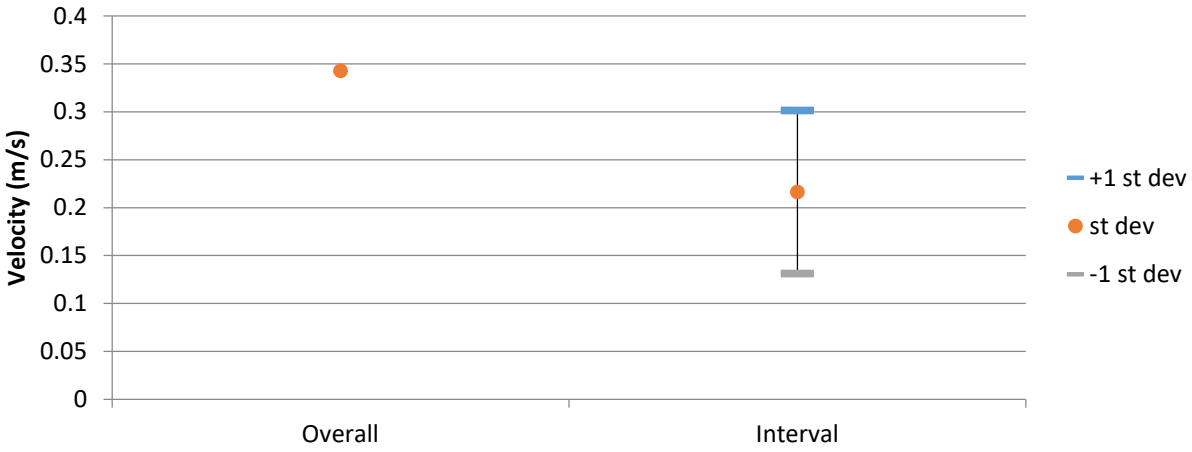


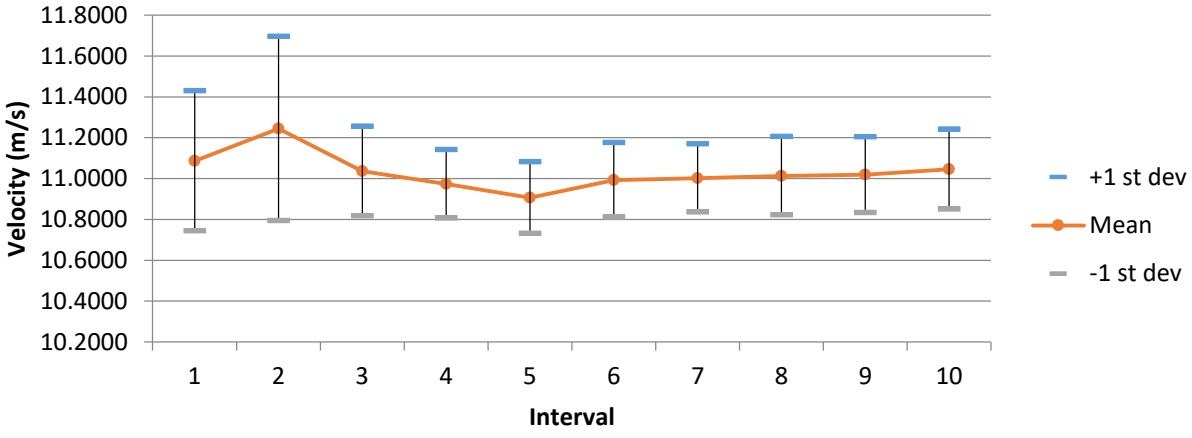
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 271
Blockage Condition: 2D at 8'
Blower Frequency: 50 Hz
Inlet Probe Location: E2
First Sample Date: 23-Aug-13
First Sample Time: 10:44:09.250

Table 1. Total velocity and velocity component data for entire run.

	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	13.5772	11.2370	12.2804	0.3745
u	12.8000	9.0500	11.1357	0.5812
v	2.3400	-2.2200	-0.4163	0.7474
w	-1.5100	-7.4700	-5.0439	0.6598

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	13.1367	11.3188	12.1787	0.3049	2.7811
2	13.3130	11.2370	12.1230	0.3372	3.0535
3	13.5772	11.4832	12.3587	0.3774	2.8062
4	13.3514	11.3196	12.1771	0.3417	3.0103
5	13.4099	11.4175	12.3170	0.3708	1.6395
6	13.2674	11.3059	11.9537	0.1960	2.9495
7	13.1535	11.4577	12.2947	0.3626	3.0340
8	13.1444	11.2576	12.2816	0.3726	1.9616
9	13.3684	11.5080	12.5674	0.2465	2.6839
10	13.2677	11.3756	12.5523	0.3369	2.6437
		Average	12.2804	0.3247	2.6563
		St Dev	0.1875	0.0599	0.4547

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	11.2870	0.7748	-4.3606	0.5327	0.5825	0.8827	4.7192	5.1609	7.8206
2	11.0699	0.3046	-4.7811	0.6359	0.6756	0.8510	5.7448	6.1035	7.6879
3	11.2759	-0.8290	-4.9236	0.4922	0.6349	0.3980	4.3647	5.6305	3.5297
4	10.9491	-0.3264	-5.2295	0.5612	0.7286	0.4654	5.1256	6.6544	4.2510
5	11.2722	-0.8426	-4.8117	0.4512	0.6104	0.5877	4.0028	5.4152	5.2135
6	10.4174	-0.8875	-5.7595	0.3575	0.4194	0.3808	3.4320	4.0259	3.6549
7	10.9985	-0.6361	-5.4161	0.4839	0.5034	0.3133	4.4002	4.5773	2.8487
8	11.0515	-0.7382	-5.2625	0.5547	0.3318	0.4285	5.0190	3.0026	3.8778
9	11.6039	-0.5105	-4.7637	0.3074	0.3783	0.3999	2.6491	3.2603	3.4462
10	11.4316	-0.4722	-5.1301	0.4644	0.3413	0.3455	4.0621	2.9860	3.0221

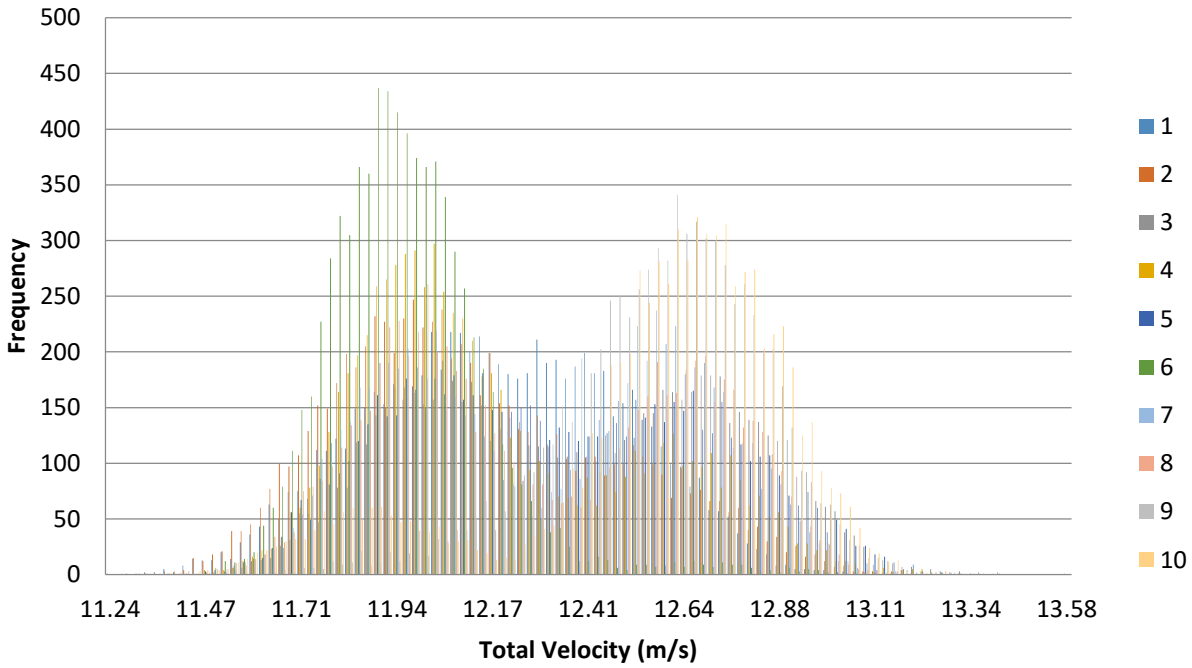


Figure 1. Velocity histogram for each interval (100 bins).

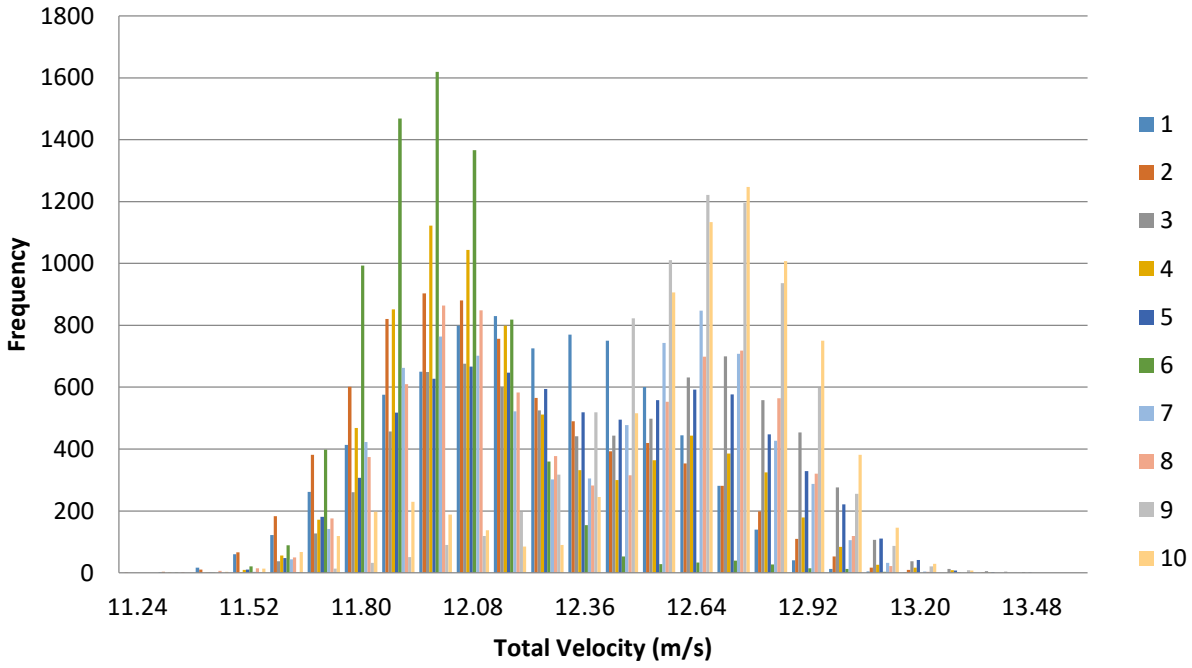
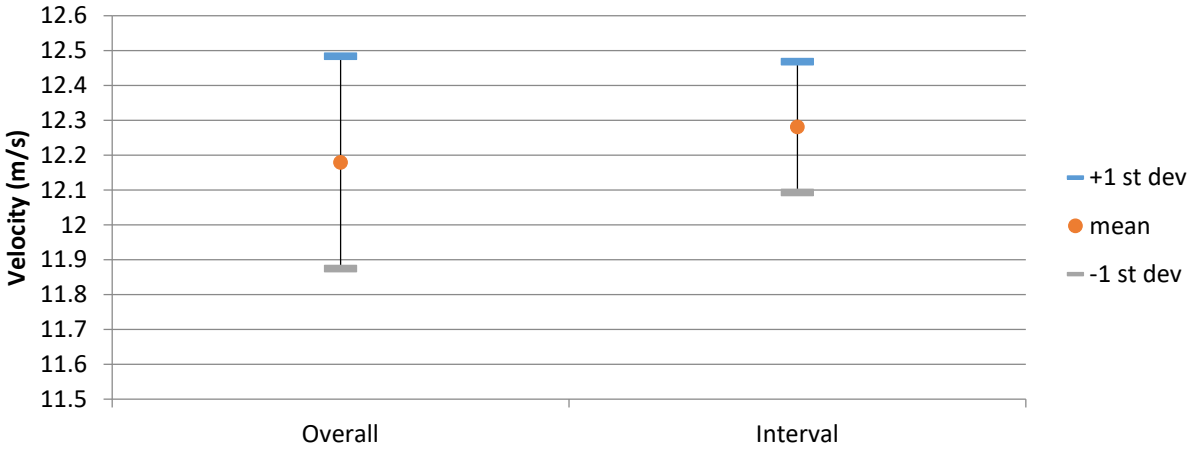
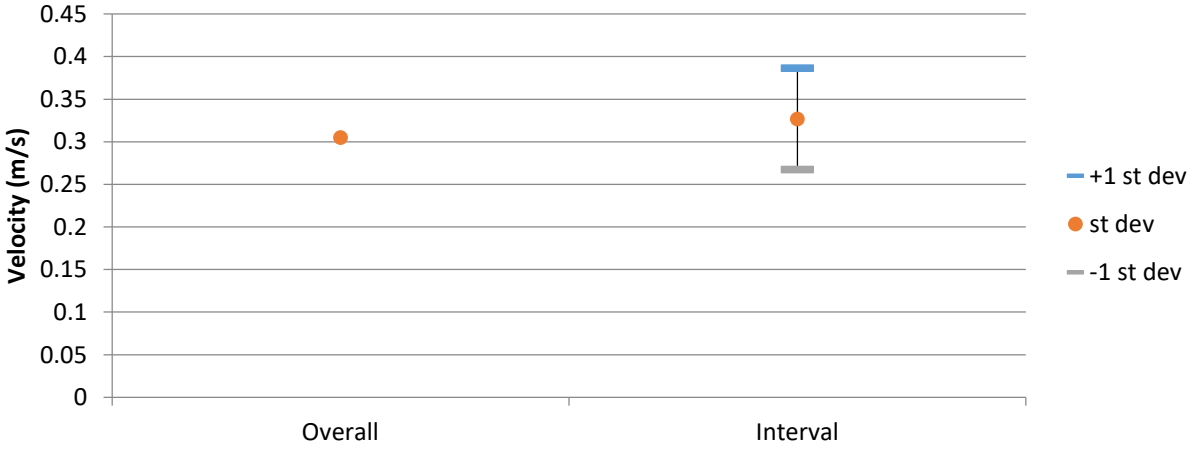


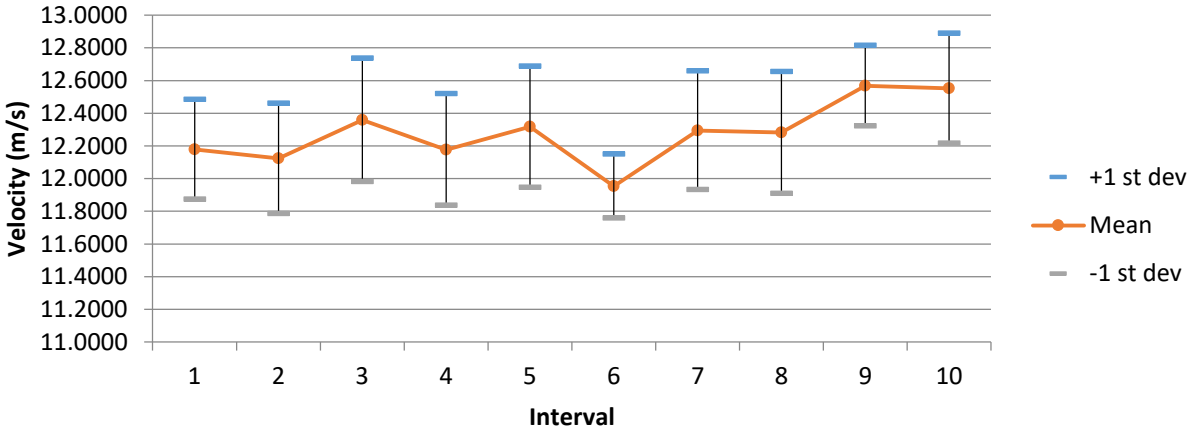
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 272
Blockage Condition: All Buildings.
Blower Frequency: 40 Hz
Inlet Probe Location: A5
First Sample Date: 28-Aug-13 First Sample Time: 11:15:17.312

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	4.2361	10.8317	7.1720	0.3288
u	3.8800	10.8000	7.1195	0.3343
v	-2.8600	2.8700	0.3173	0.3839
w	-2.6700	2.6500	-0.6387	0.3014

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	7.8406	6.0763	7.0342	0.2200	3.1271
2	7.9617	5.9494	7.2173	0.2288	3.1696
3	7.6597	5.9484	6.8554	0.2490	3.6326
4	7.4601	5.9065	6.7144	0.1901	2.8310
5	8.4390	5.5715	6.9984	0.2408	3.4405
6	10.8317	5.2781	7.2637	0.2514	3.4605
7	8.0506	5.9236	7.0779	0.1894	2.6758
8	8.2471	4.2361	7.3097	0.2035	2.7844
9	8.4831	5.7083	7.2575	0.2159	2.9751
10	8.0843	6.0157	7.2069	0.2704	3.7515
11	9.0937	6.4848	7.5214	0.1693	2.2515
12	8.7187	6.1075	7.6069	0.1856	2.4396
		Average	7.1720	0.2178	3.0449
		St Dev	0.2553	0.0312	0.4516

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	6.9787	0.5386	-0.5444	0.2346	0.3363	0.2673	3.3622	4.8194	3.8302
2	7.1665	0.1011	-0.6957	0.2339	0.4178	0.2425	3.2643	5.8300	3.3839
3	6.7886	0.4301	-0.6114	0.2535	0.4817	0.3451	3.7340	7.0956	5.0838
4	6.6702	0.3290	-0.4984	0.1961	0.4017	0.2665	2.9392	6.0224	3.9949
5	6.9391	0.4521	-0.6516	0.2415	0.3447	0.2790	3.4809	4.9673	4.0214
6	7.2147	0.2979	-0.5554	0.2467	0.3927	0.4005	3.4195	5.4438	5.5506
7	7.0146	0.1721	-0.8124	0.1903	0.3551	0.2779	2.7127	5.0628	3.9618
8	7.2601	0.2685	-0.6681	0.2208	0.3407	0.2843	3.0412	4.6924	3.9152
9	7.2016	0.2352	-0.7553	0.2170	0.3266	0.2741	3.0138	4.5356	3.8057
10	7.1614	0.2518	-0.6507	0.2718	0.3029	0.2734	3.7947	4.2302	3.8175
11	7.4733	0.3848	-0.6227	0.1731	0.3465	0.2541	2.3158	4.6366	3.4000
12	7.5648	0.3462	-0.5978	0.1882	0.2958	0.2692	2.4879	3.9104	3.5582

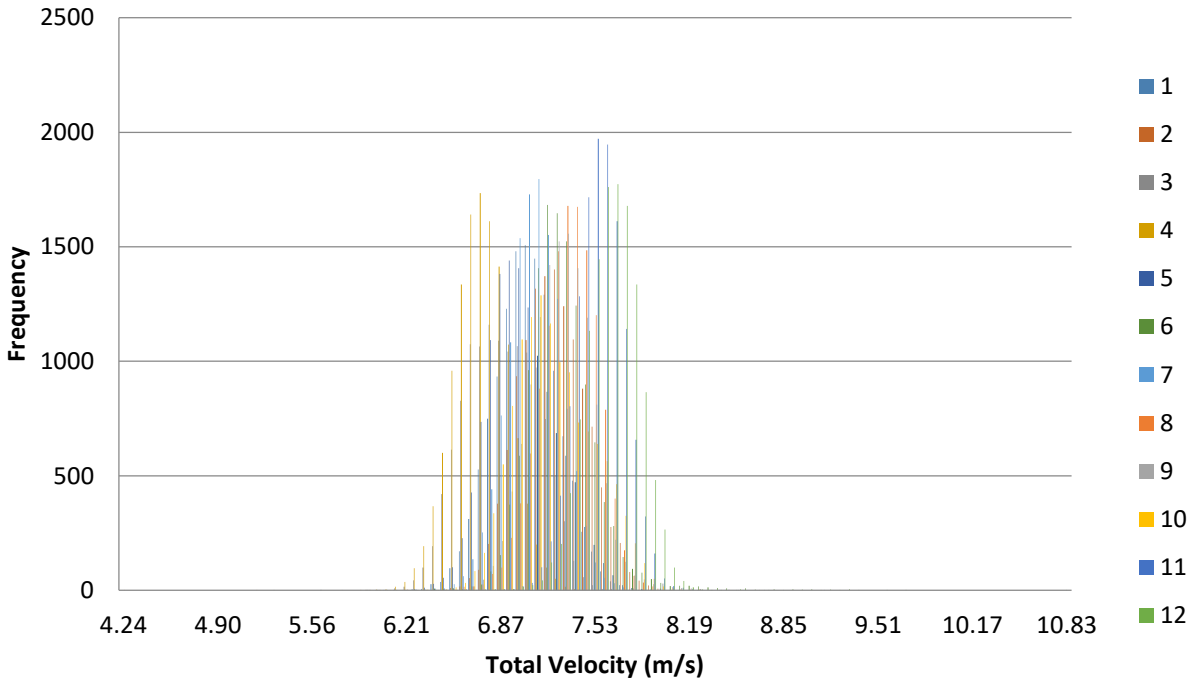


Figure 1. Velocity histogram for each interval (100 bins).

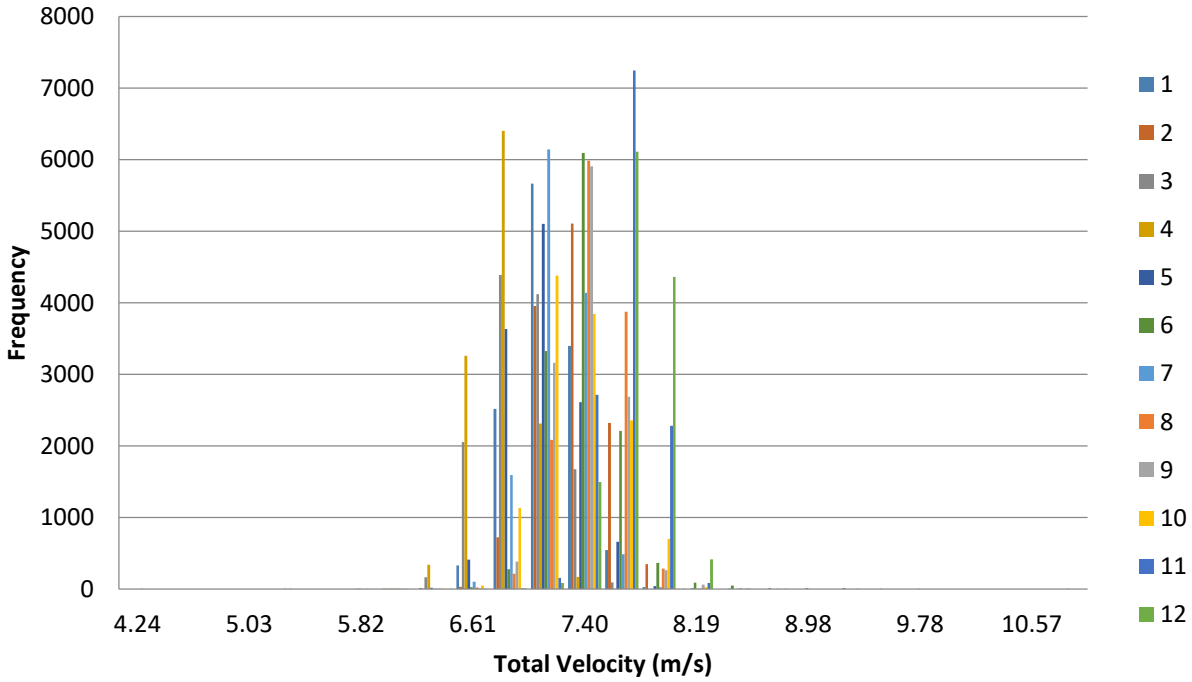
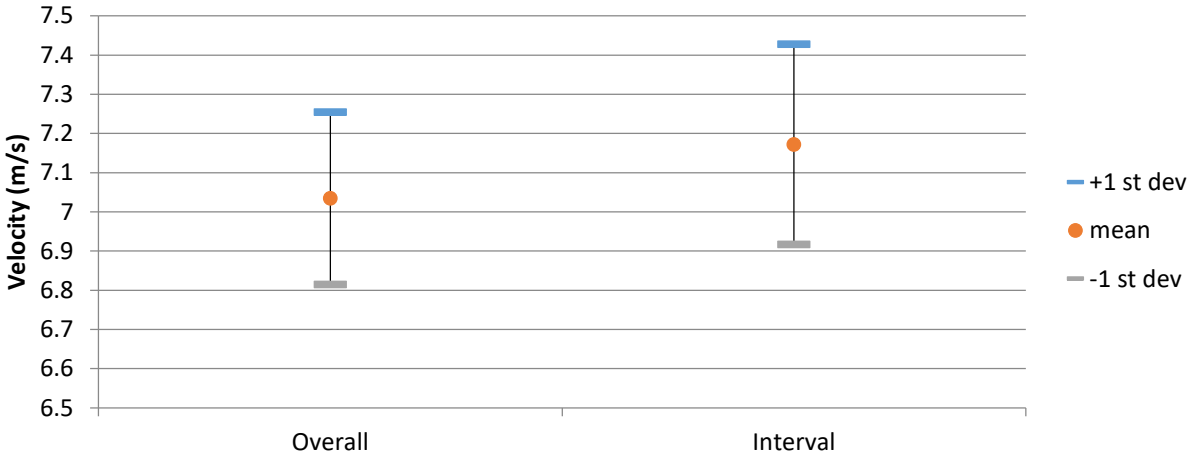
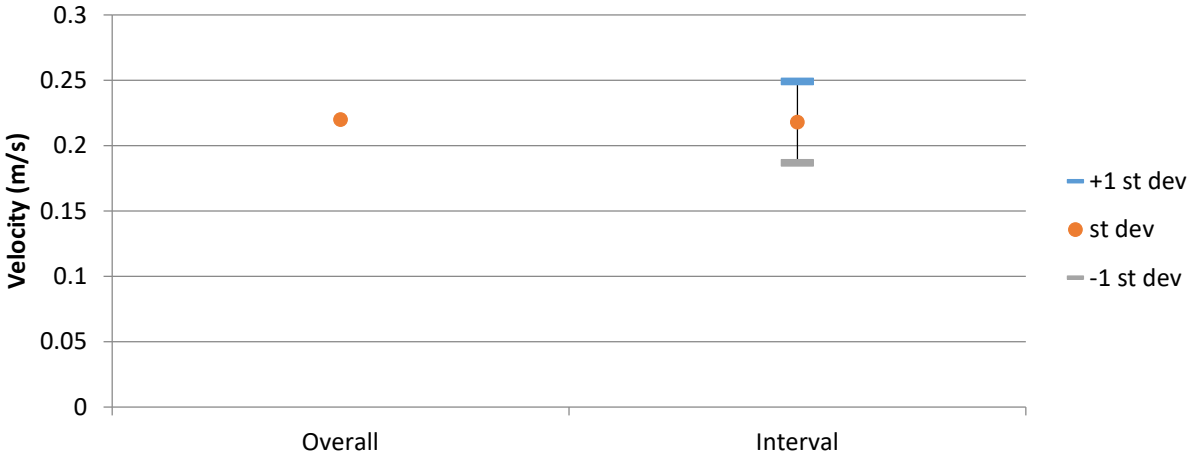


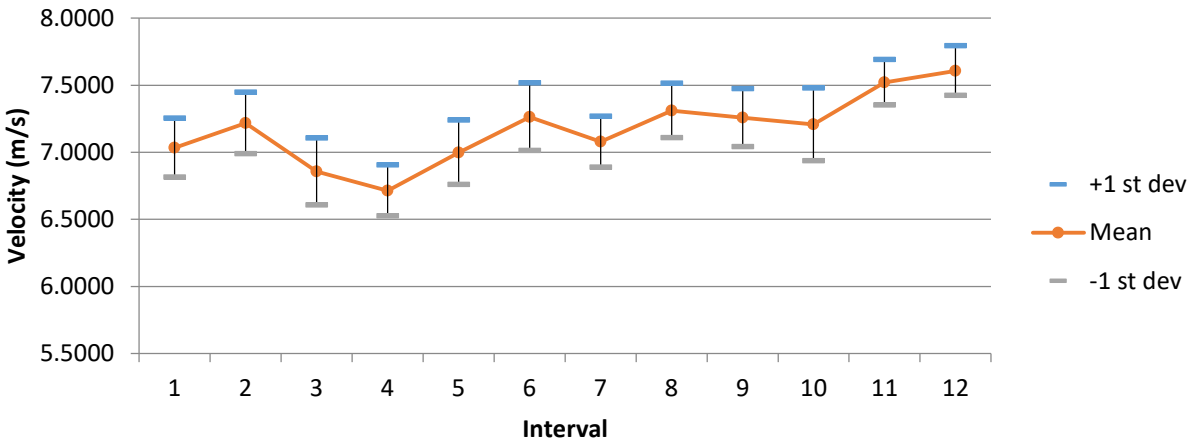
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 273
Blockage Condition: All Buildings.
Blower Frequency: 40 Hz
Inlet Probe Location: A5
First Sample Date: 28-Aug-13 First Sample Time: 11:24:09.546

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.5090	9.4795	7.4251	0.2339
u	5.4100	9.4600	7.3766	0.2371
v	-1.6200	2.5200	0.3812	0.3482
w	-2.5800	1.7400	-0.6038	0.2920

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	8.9113	5.5090	7.3701	0.1780	2.4158
2	8.9647	6.2457	7.2506	0.1746	2.4083
3	8.4676	6.2931	7.2921	0.1761	2.4156
4	9.4795	6.1814	7.4460	0.1739	2.3350
5	8.6818	6.5154	7.5328	0.1656	2.1979
6	9.0603	6.2336	7.4819	0.2110	2.8201
7	8.0848	6.3520	7.3728	0.1587	2.1528
8	8.6579	6.0168	7.4025	0.1905	2.5738
9	7.8683	6.3049	7.2302	0.1671	2.3117
10	8.2720	6.6232	7.3237	0.1677	2.2896
11	9.1261	6.2478	7.6743	0.2264	2.9506
12	8.3251	7.1027	7.7232	0.1525	1.9749
		Average	7.4250	0.1785	2.4038
		St Dev	0.1563	0.0214	0.2610

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	7.3206	0.4492	-0.6043	0.1843	0.2921	0.2704	2.5173	3.9901	3.6933
2	7.2005	0.4687	-0.6133	0.1801	0.2644	0.2379	2.5014	3.6717	3.3033
3	7.2434	0.4852	-0.5606	0.1807	0.2948	0.2655	2.4953	4.0693	3.6654
4	7.4053	0.2800	-0.6061	0.1781	0.3051	0.2522	2.4056	4.1198	3.4063
5	7.4907	0.3290	-0.6264	0.1665	0.2829	0.2261	2.2222	3.7771	3.0186
6	7.4227	0.5451	-0.5873	0.2155	0.3674	0.3216	2.9028	4.9503	4.3322
7	7.3282	0.3954	-0.5813	0.1643	0.3055	0.2591	2.2423	4.1695	3.5357
8	7.3526	0.6019	-0.4926	0.1954	0.2596	0.2506	2.6571	3.5307	3.4086
9	7.1883	0.4041	-0.5576	0.1735	0.2975	0.1996	2.4142	4.1387	2.7770
10	7.2780	0.4519	-0.5230	0.1724	0.3568	0.2470	2.3687	4.9030	3.3941
11	7.5909	-0.0281	-0.9694	0.2363	0.4007	0.4096	3.1128	5.2790	5.3960
12	7.6972	0.1933	-0.5232	0.1550	0.2178	0.2052	2.0138	2.8297	2.6657

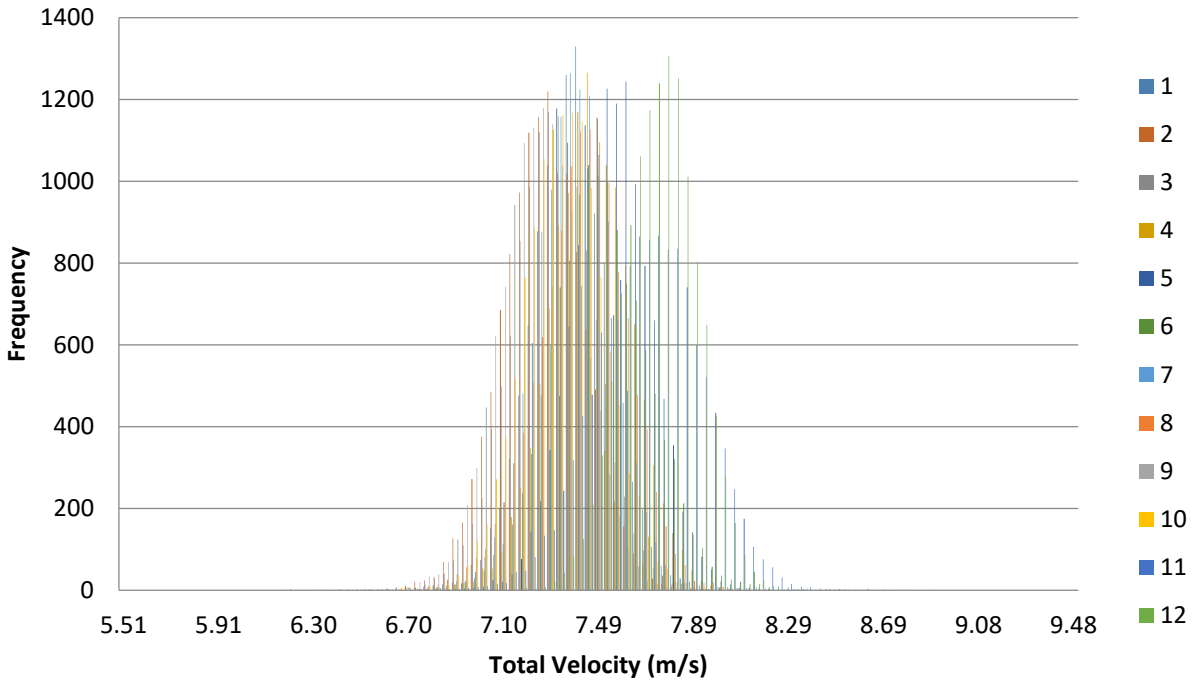


Figure 1. Velocity histogram for each interval (100 bins).

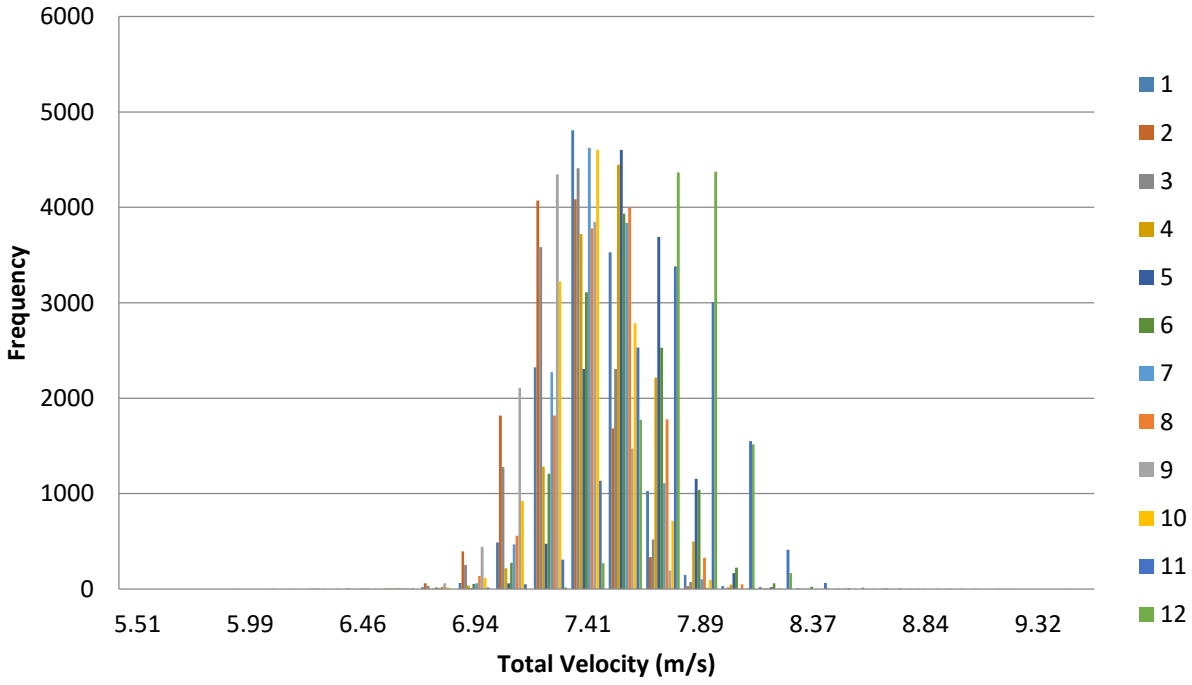
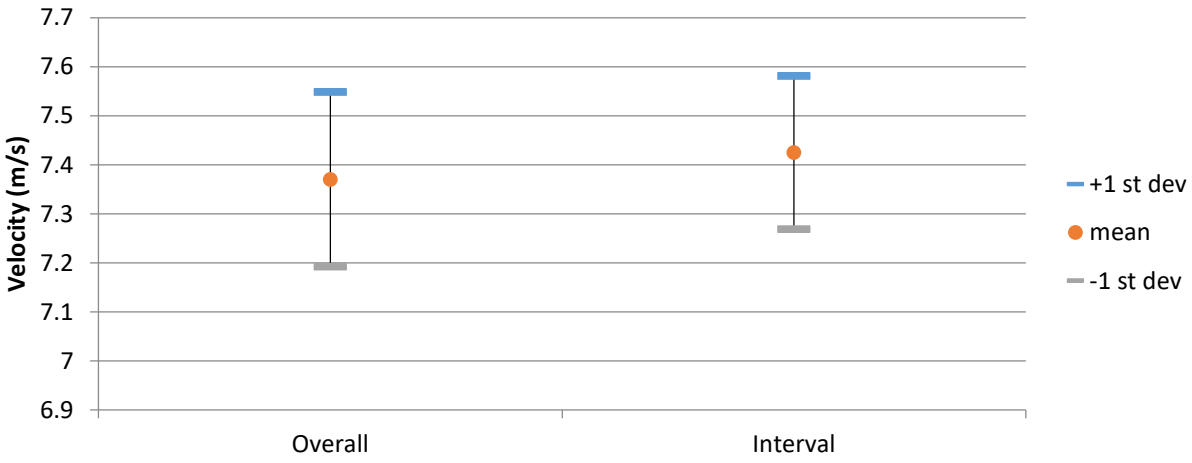
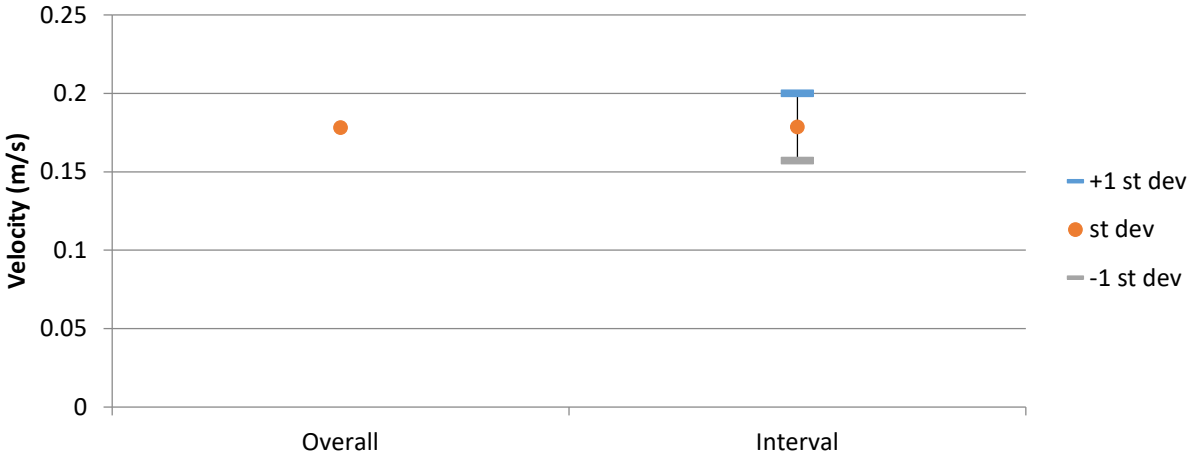


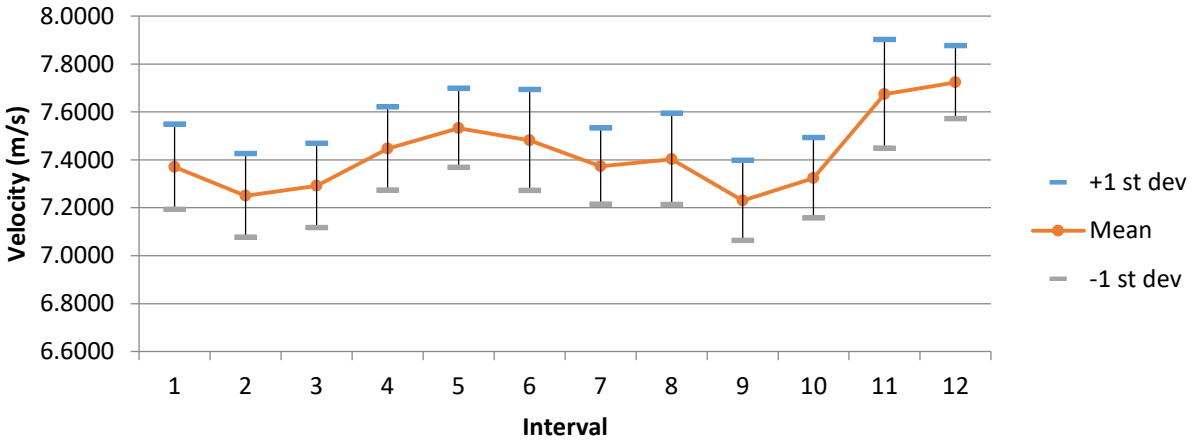
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 274
Blockage Condition: All buildings.
Blower Frequency: 40 Hz
Inlet Probe Location: E3
First Sample Date: 29-Aug-13 First Sample Time: 06:41:00.703

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	8.4968	12.2320	10.3834	0.3837
u	6.3600	8.8200	7.8324	0.3483
v	3.8500	8.2800	6.2358	0.4986
w	-4.1100	-1.6900	-2.6978	0.2884

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)	# Zero Values	% Zero Values
1	11.5657	9.3384	10.3721	0.2894	2.7900	0	0.00 %
2	11.5126	9.3302	10.3483	0.2911	2.8133	0	0.00 %
3	12.1022	9.4702	10.6480	0.4873	4.5760	0	0.00 %
4	11.3885	9.2298	10.3287	0.2804	2.7148	0	0.00 %
5	11.2854	8.8218	10.1941	0.2992	2.9355	0	0.00 %
6	11.8297	8.4968	10.3281	0.4282	4.1457	6	0.05 %
7	11.8860	9.0165	10.2924	0.3295	3.2011	5	0.04 %
8	11.5855	8.7845	10.2850	0.3392	3.2981	9	0.07 %
9	12.2320	8.6393	10.4206	0.4589	4.4040	4	0.03 %
10	11.9227	9.1423	10.4739	0.3700	3.5329	1	0.01 %
11	11.9822	9.4498	10.4686	0.3888	3.7144	0	0.00 %
12	11.9193	9.3923	10.4404	0.3682	3.5268	0	0.00 %
		Average	10.3833	0.3609	3.4411		
		St Dev	0.1123	0.066293	0.6633		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	7.6674	6.3890	-2.7988	0.1460	0.4197	0.1597	1.9042	5.4735	2.0827
2	7.7114	6.3341	-2.7135	0.1531	0.4140	0.1639	1.9855	5.3691	2.1255
3	7.9313	6.5572	-2.7099	0.3347	0.4741	0.1825	4.2202	5.9773	2.3016
4	8.1055	5.9175	-2.4053	0.2180	0.4213	0.1853	2.6891	5.1975	2.2860
5	7.7385	6.0184	-2.7570	0.2171	0.4428	0.2427	2.8056	5.7225	3.1361
6	7.7127	6.2233	-2.8393	0.4560	0.4882	0.3600	5.9123	6.3297	4.6672
7	7.6795	6.2262	-2.8204	0.2594	0.4609	0.2572	3.3773	6.0013	3.3492
8	7.5019	6.3768	-2.9218	0.2946	0.5037	0.2769	3.9276	6.7139	3.6914
9	7.6855	6.3895	-2.9047	0.3367	0.5537	0.2195	4.3811	7.2046	2.8566
10	7.9724	6.2549	-2.6109	0.3099	0.4312	0.2404	3.8867	5.4090	3.0148
11	8.1213	6.1084	-2.4786	0.2589	0.4746	0.1988	3.1885	5.8439	2.4482
12	8.1596	6.0341	-2.4144	0.2267	0.4786	0.1941	2.7784	5.8660	2.3793

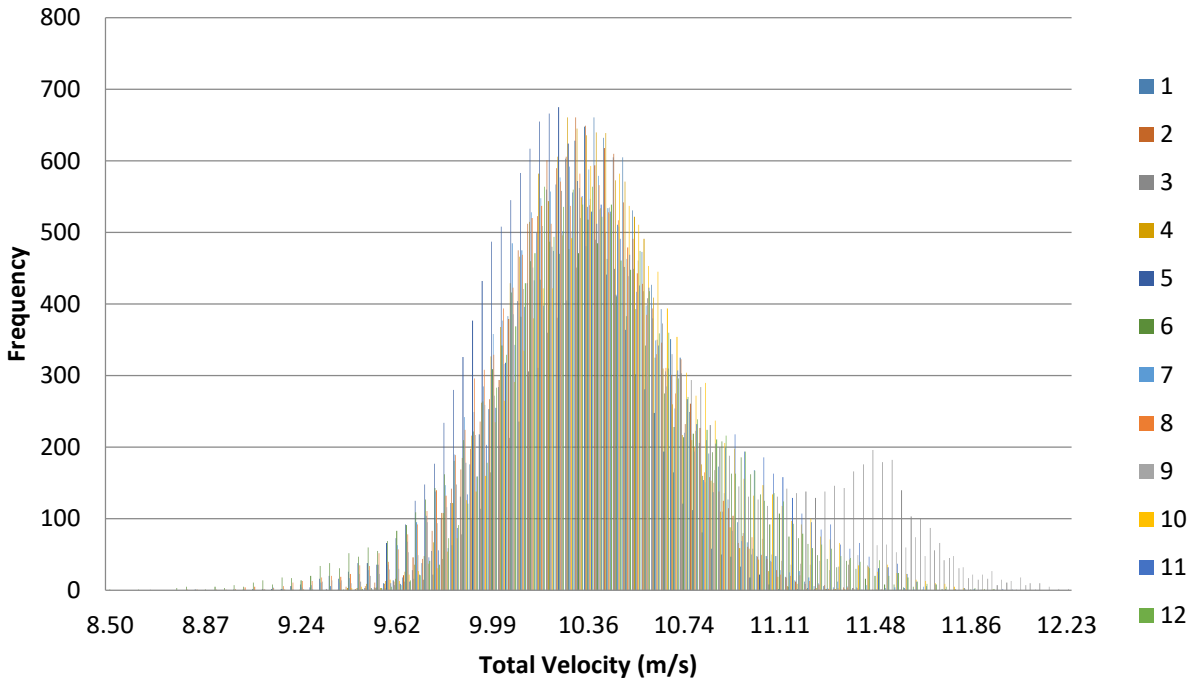


Figure 1. Velocity histogram for each interval (100 bins).

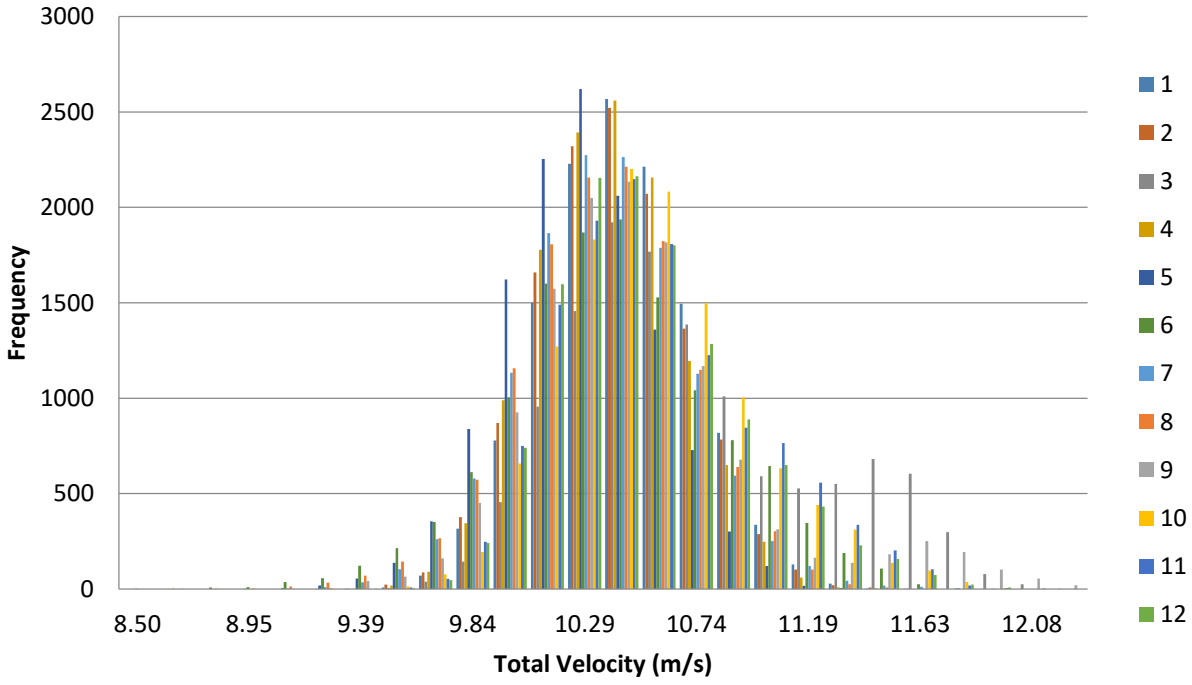
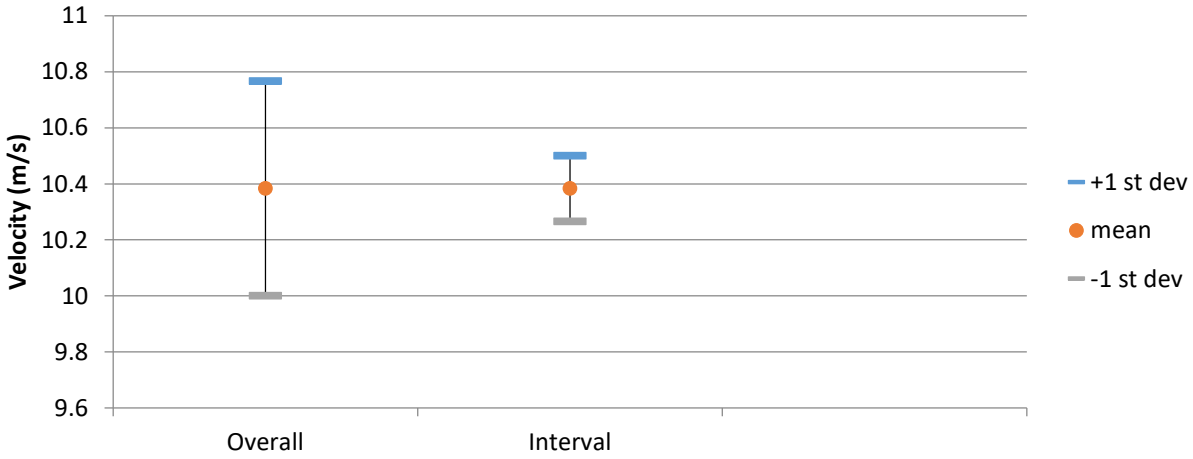
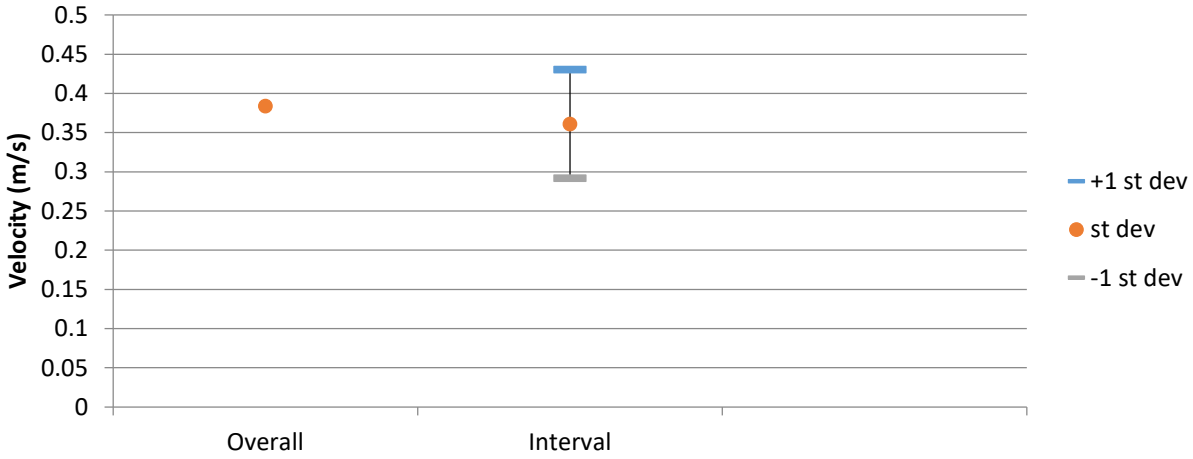


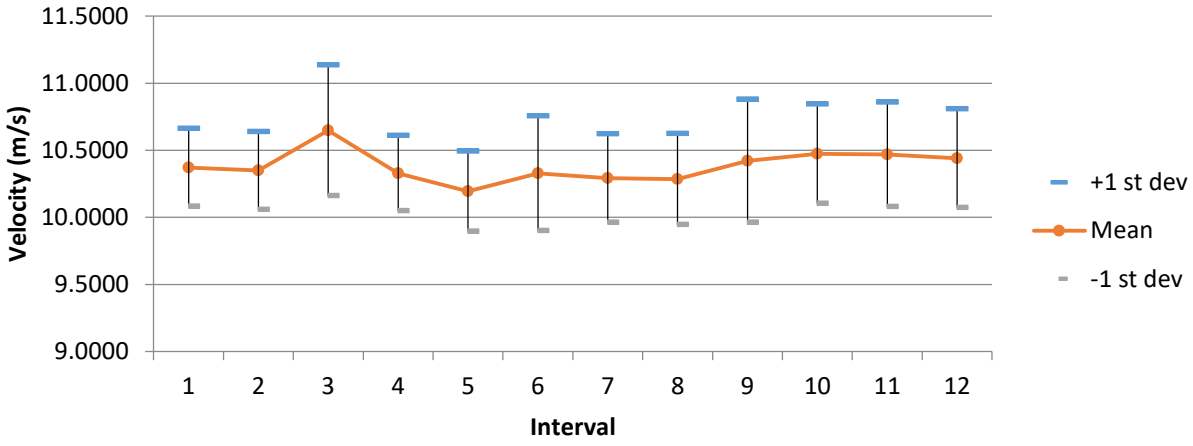
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 275
Blockage Condition: All Buildings.
Blower Frequency: 40 Hz
Inlet Probe Location: E3
First Sample Date: 29-Aug-13 First Sample Time: 07:41:00.593

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	9.0247	12.0493	10.3193	0.3393
u	7.2400	8.8400	8.0522	0.2123
v	4.1800	8.0300	5.9312	0.4374
w	-3.2900	-1.4500	-2.5125	0.1924

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)	# Zero Values	% Zero Values
1	11.2804	9.1694	10.2014	0.2565	2.5146	0	0.00 %
2	11.4215	9.2503	10.2213	0.2592	2.5360	0	0.00 %
3	11.3691	9.3022	10.2102	0.2576	2.5230	0	0.00 %
4	11.4183	9.3330	10.2799	0.2688	2.6146	0	0.00 %
5	11.7349	9.3968	10.3587	0.2894	2.7934	0	0.00 %
6	11.6182	9.2704	10.3211	0.2977	2.8842	0	0.00 %
7	12.0493	9.3676	10.4357	0.3617	3.4659	1	0.01 %
8	11.9440	9.4623	10.6739	0.3738	3.5020	0	0.00 %
9	11.9300	9.2728	10.3597	0.3662	3.5346	0	0.00 %
10	11.7298	9.2914	10.2474	0.3118	3.0430	0	0.00 %
11	11.3143	9.0247	10.1571	0.2731	2.6891	0	0.00 %
12	11.9438	9.3577	10.3638	0.3827	3.6931	0	0.00 %
		Average	10.3192	0.3082	2.9411		
		St Dev	0.1332	0.047412	0.4006		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	7.9669	5.7932	-2.6269	0.1426	0.3980	0.1508	1.7897	4.9962	1.8927
2	7.9820	5.8334	-2.5725	0.1185	0.3899	0.1348	1.4847	4.8850	1.6889
3	7.9538	5.8468	-2.5822	0.1510	0.3867	0.1618	1.8980	4.8622	2.0341
4	8.0179	5.9063	-2.5261	0.1230	0.3993	0.1468	1.5336	4.9797	1.8315
5	8.0282	6.0467	-2.4852	0.1360	0.3957	0.1442	1.6942	4.9288	1.7965
6	8.0255	5.9631	-2.5358	0.1553	0.4059	0.1646	1.9351	5.0574	2.0509
7	8.0703	6.1160	-2.5007	0.1993	0.4273	0.1571	2.4695	5.2952	1.9465
8	8.3729	6.1650	-2.3850	0.2274	0.4314	0.1821	2.7159	5.1528	2.1754
9	8.0456	6.0080	-2.5169	0.2424	0.4437	0.1964	3.0122	5.5150	2.4407
10	8.0226	5.8475	-2.5074	0.1869	0.4347	0.1984	2.3296	5.4187	2.4735
11	7.9388	5.7696	-2.5871	0.1544	0.4261	0.1721	1.9444	5.3678	2.1680
12	8.2018	5.8768	-2.3234	0.2309	0.4856	0.2476	2.8153	5.9204	3.0187

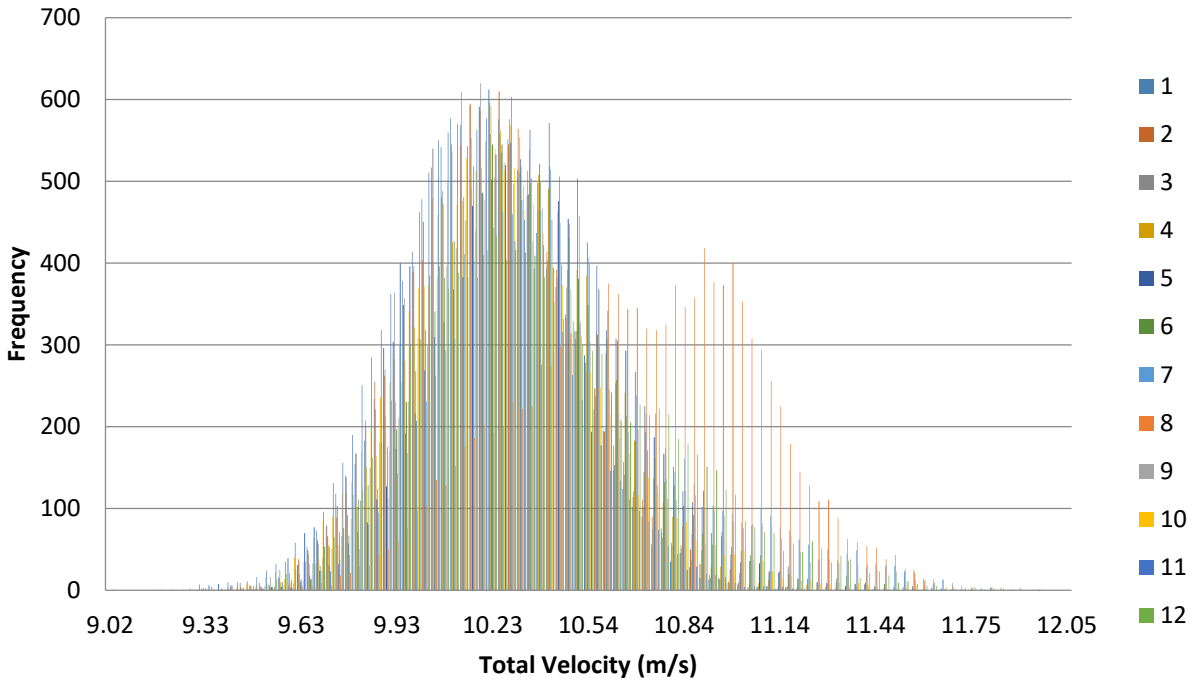


Figure 1. Velocity histogram for each interval (100 bins).

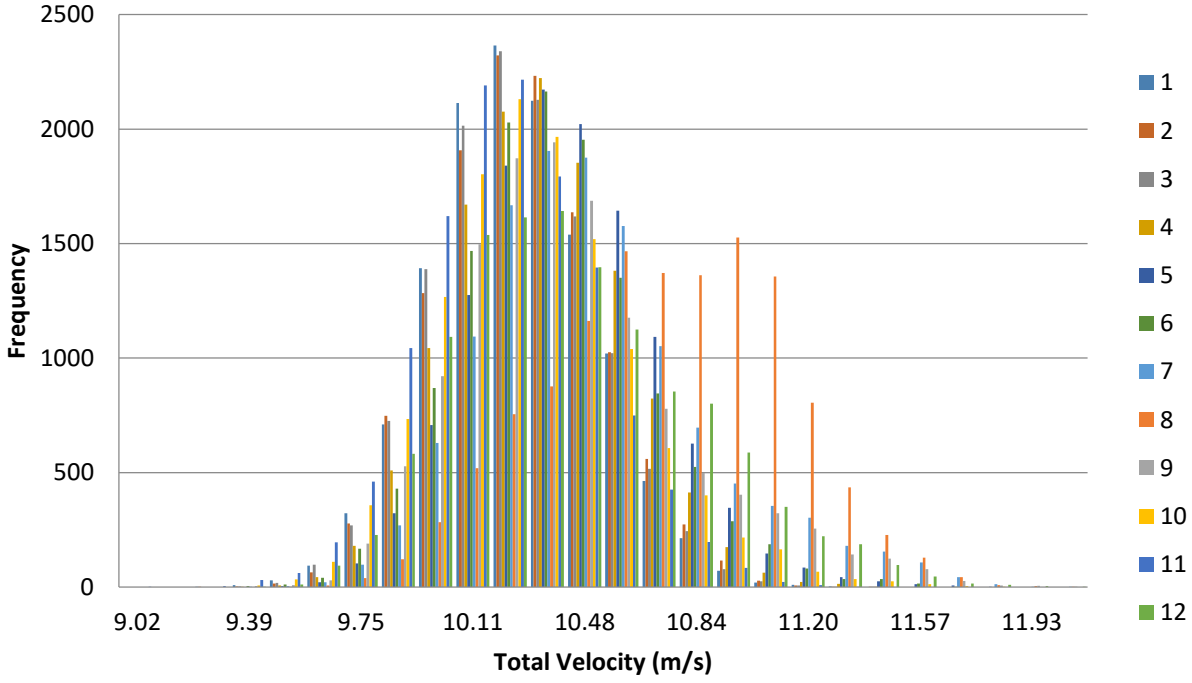
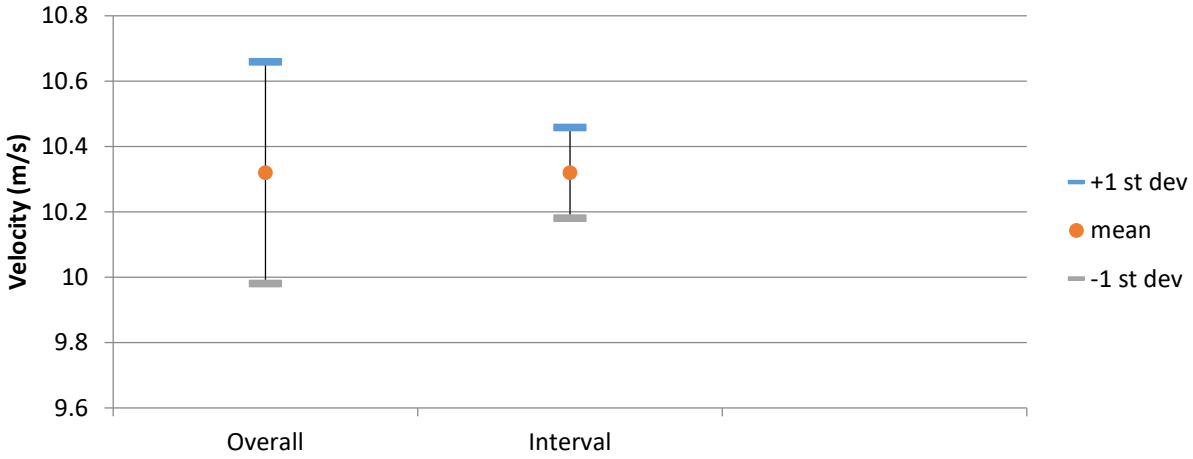
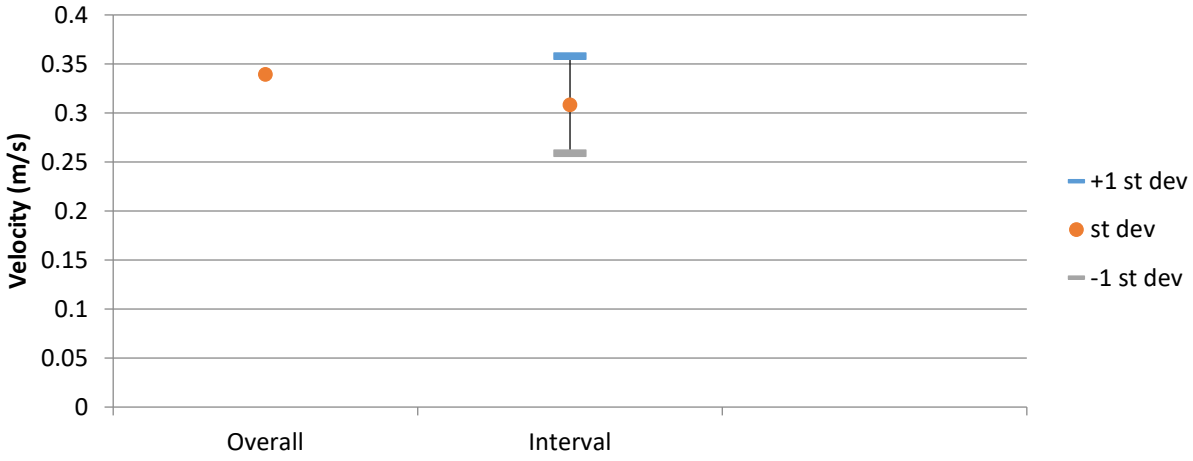


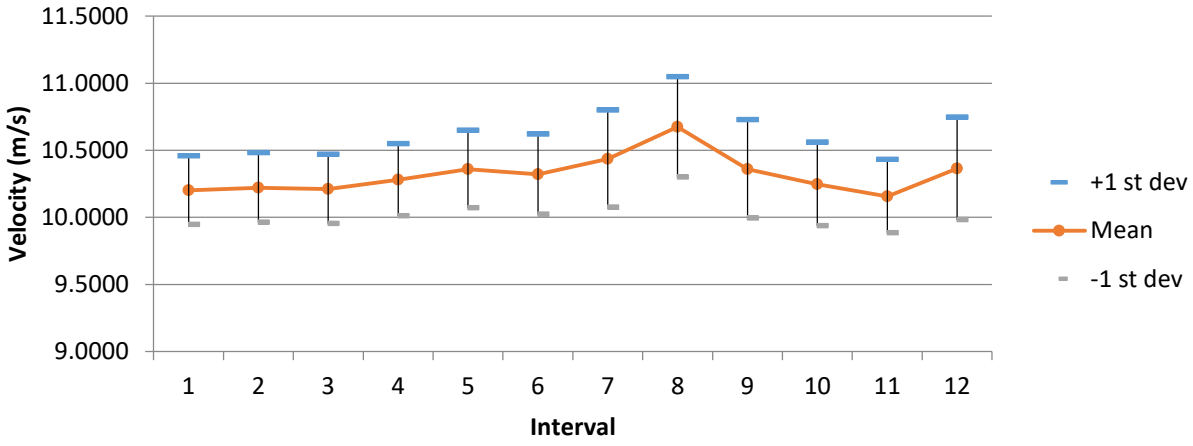
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 276
Blockage Condition: All Buildings.
Blower Frequency: 40 Hz
Inlet Probe Location: E3
First Sample Date: 29-Aug-13 First Sample Time: 07:58:41.359

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.7999	16.2321	10.3502	0.9147
u	5.5400	13.4000	9.4396	0.8457
v	-0.1850	10.4000	3.7085	1.1057
w	-5.7400	3.2000	-1.4523	1.0277

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)	# Zero Values	% Zero Values
1	13.9957	7.3765	10.1691	0.8866	8.7190	0	0.00 %
2	14.5330	7.5409	10.2556	0.8889	8.6674	0	0.00 %
3	16.2321	7.4894	10.3385	0.9583	9.2692	0	0.00 %
4	14.7611	7.5968	10.4562	0.9879	9.4478	4	0.03 %
5	14.4848	5.7999	10.2061	0.9227	9.0403	0	0.00 %
6	14.6007	7.3330	10.3952	0.8592	8.2658	1	0.01 %
7	13.6482	7.4635	10.2603	0.8463	8.2484	1	0.01 %
8	14.1149	7.3655	10.3078	0.9449	9.1672	1	0.01 %
9	13.7038	7.6528	10.4584	0.9219	8.8148	0	0.00 %
10	15.5891	7.0114	10.4946	0.9352	8.9116	0	0.00 %
11	13.9662	7.6607	10.4655	0.8999	8.5988	0	0.00 %
12	14.3436	7.5428	10.3957	0.8394	8.0744	1	0.01 %
		Average	10.3503	0.9076	8.8552		
		St Dev	0.1055	0.04397	0.3779		

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	9.2820	3.6792	-1.2863	0.8093	1.0371	1.0587	8.7187	11.1731	11.4063
2	9.4408	3.5033	-1.3137	0.8195	1.0506	1.0318	8.6801	11.1288	10.9287
3	9.4596	3.6367	-1.4309	0.8724	1.1520	0.9790	9.2225	12.1781	10.3488
4	9.4204	3.9315	-1.6088	0.8805	1.2583	1.0770	9.3465	13.3575	11.4331
5	9.2694	3.7495	-1.4368	0.8202	1.1018	1.0422	8.8486	11.8866	11.2434
6	9.4419	3.7995	-1.4331	0.8301	1.1981	1.0174	8.7920	12.6891	10.7754
7	9.3183	3.7996	-1.4188	0.7863	1.0801	0.9614	8.4383	11.5910	10.3177
8	9.3926	3.7077	-1.4549	0.8591	1.1438	1.0071	9.1462	12.1773	10.7223
9	9.6127	3.5528	-1.5418	0.8466	0.9928	1.0593	8.8069	10.3277	11.0195
10	9.5919	3.7040	-1.5699	0.9237	0.9983	0.9867	9.6297	10.4078	10.2872
11	9.5641	3.7215	-1.4284	0.8398	1.1025	1.0269	8.7809	11.5275	10.7368
12	9.4831	3.7168	-1.5039	0.7650	1.0588	1.0310	8.0673	11.1656	10.8715

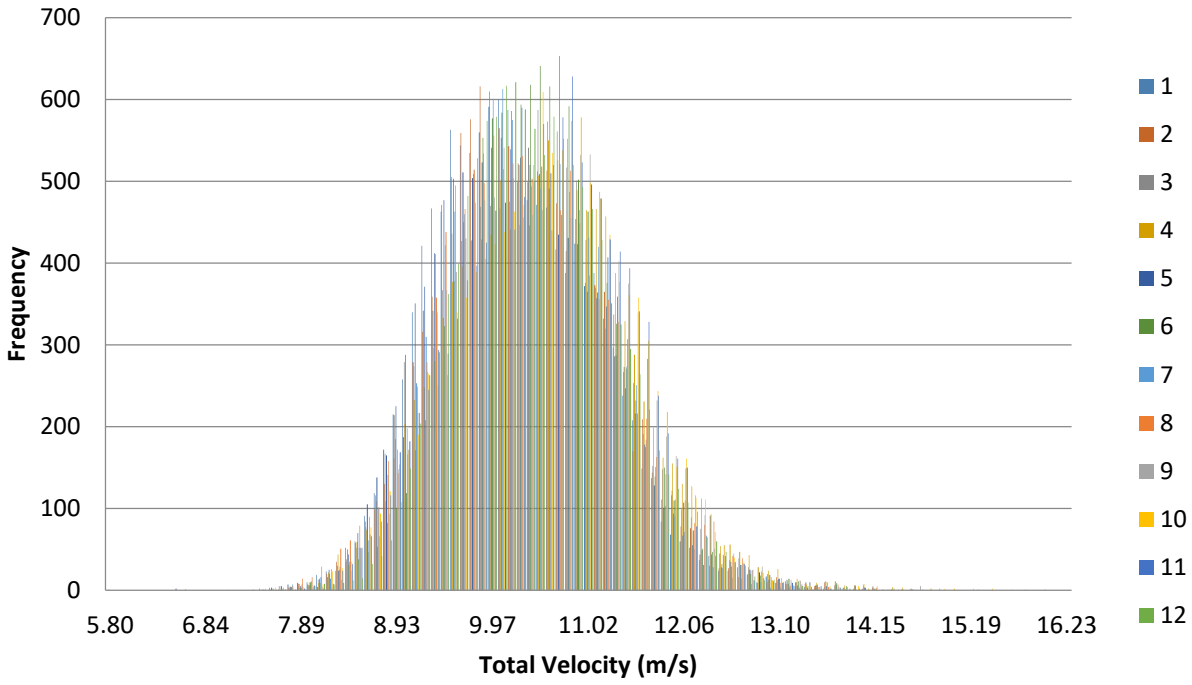


Figure 1. Velocity histogram for each interval (100 bins).

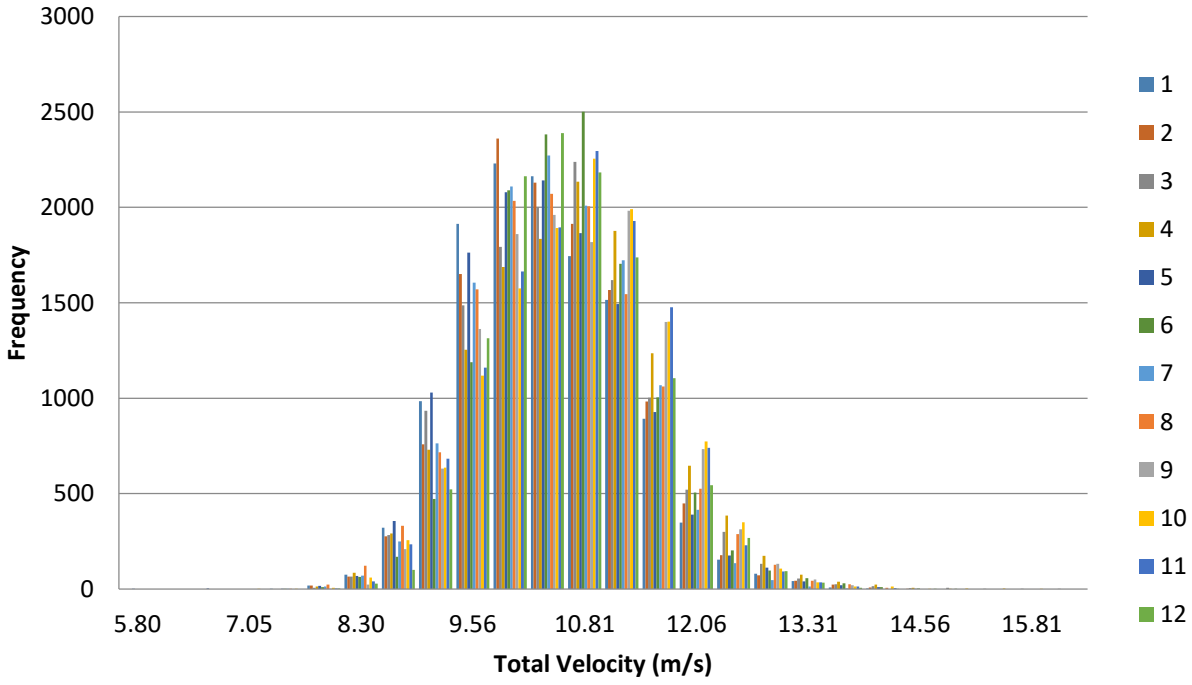
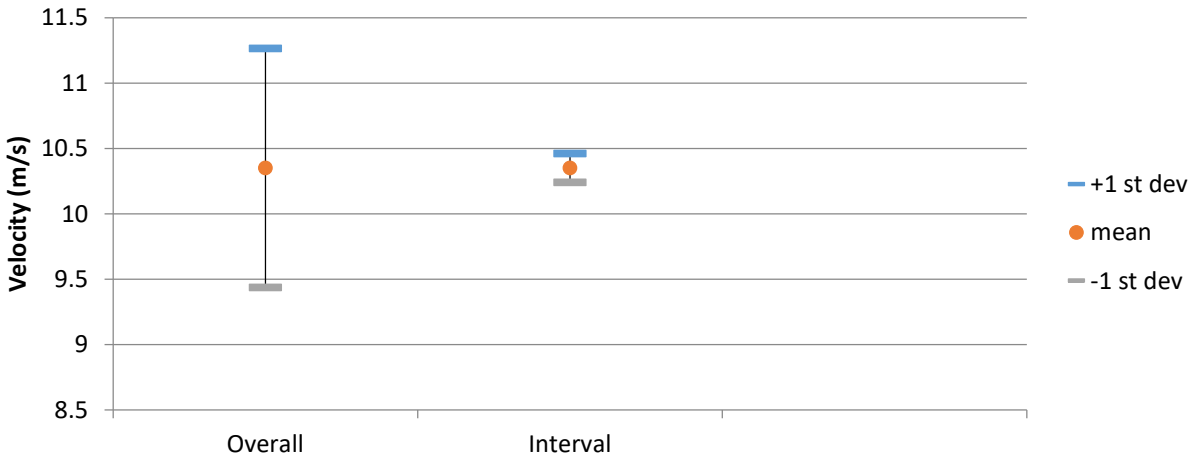
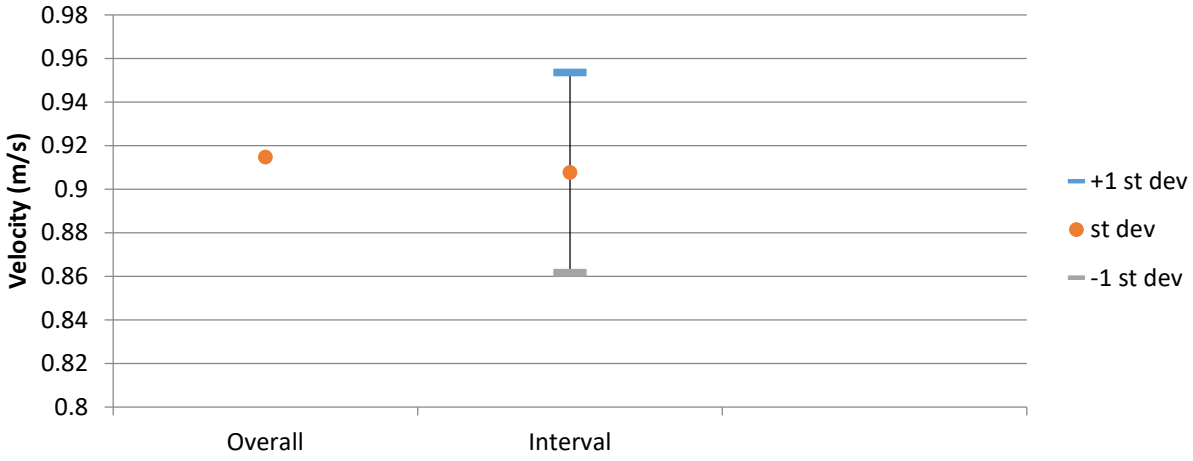


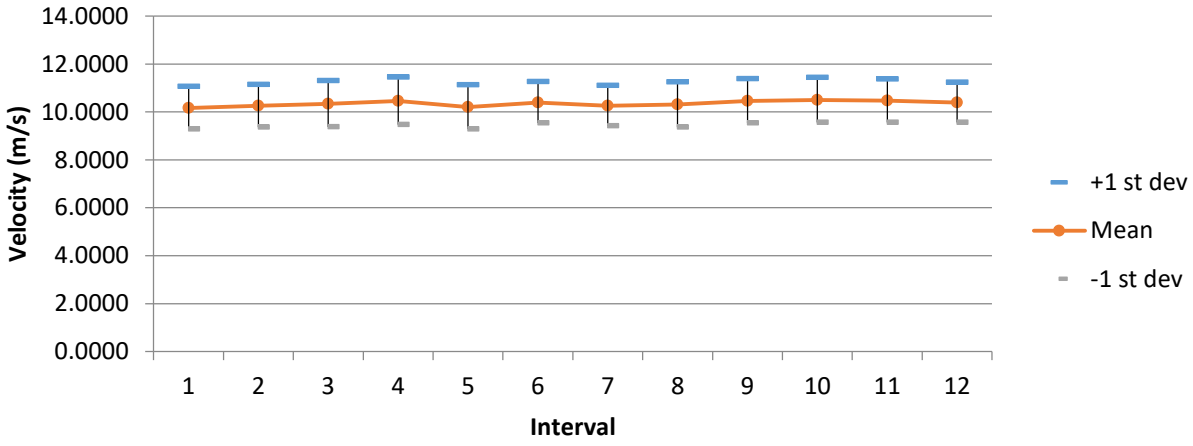
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 277
Blockage Condition: All Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 07:45:13.359

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.2883	5.9438	5.6198	0.0783
u	5.1200	5.8600	5.4995	0.0846
v	-0.4220	0.9130	0.1180	0.1960
w	-1.8200	-0.7410	-1.1229	0.1535

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.9438	5.3602	5.6483	0.0801	1.4181
2	5.8971	5.3106	5.6021	0.0718	1.2815
3	5.9319	5.2883	5.5928	0.0824	1.4740
4	5.9148	5.3075	5.5969	0.0784	1.4007
5	5.8686	5.3048	5.5937	0.0753	1.3455
6	5.8989	5.3637	5.6333	0.0702	1.2462
7	5.9009	5.3367	5.6326	0.0772	1.3697
8	5.8806	5.3255	5.6164	0.0773	1.3767
9	5.8751	5.3167	5.6195	0.0719	1.2788
10	5.8568	5.3491	5.6159	0.0690	1.2291
11	5.9416	5.3456	5.6480	0.0809	1.4327
12	5.8798	5.3388	5.6385	0.0735	1.3027
		Average	5.6198	0.0757	1.3463
		St Dev	0.0204	0.0044	0.0751

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.5569	0.0633	-0.9925	0.0859	0.1675	0.0799	1.5462	3.0139	1.4370
2	5.5001	-0.0516	-1.0524	0.0768	0.1096	0.0939	1.3954	1.9918	1.7070
3	5.4995	-0.0330	-1.0098	0.0867	0.0838	0.0765	1.5774	1.5233	1.3901
4	5.4962	-0.0225	-1.0500	0.0837	0.0872	0.0803	1.5223	1.5865	1.4616
5	5.4903	-0.1044	-1.0605	0.0798	0.0669	0.0675	1.4526	1.2180	1.2290
6	5.4958	0.0625	-1.2269	0.0744	0.1021	0.1007	1.3534	1.8578	1.8321
7	5.5235	0.1643	-1.0699	0.0872	0.1618	0.1326	1.5791	2.9298	2.4002
8	5.5117	0.1437	-1.0533	0.0834	0.1549	0.1045	1.5124	2.8111	1.8951
9	5.4959	0.2385	-1.1362	0.0787	0.1255	0.1001	1.4318	2.2828	1.8205
10	5.4882	0.2197	-1.1663	0.0759	0.0699	0.0641	1.3838	1.2739	1.1680
11	5.4702	0.4124	-1.3244	0.0828	0.1384	0.1835	1.5130	2.5295	3.3539
12	5.4661	0.3234	-1.3325	0.0807	0.1346	0.1236	1.4761	2.4628	2.2605

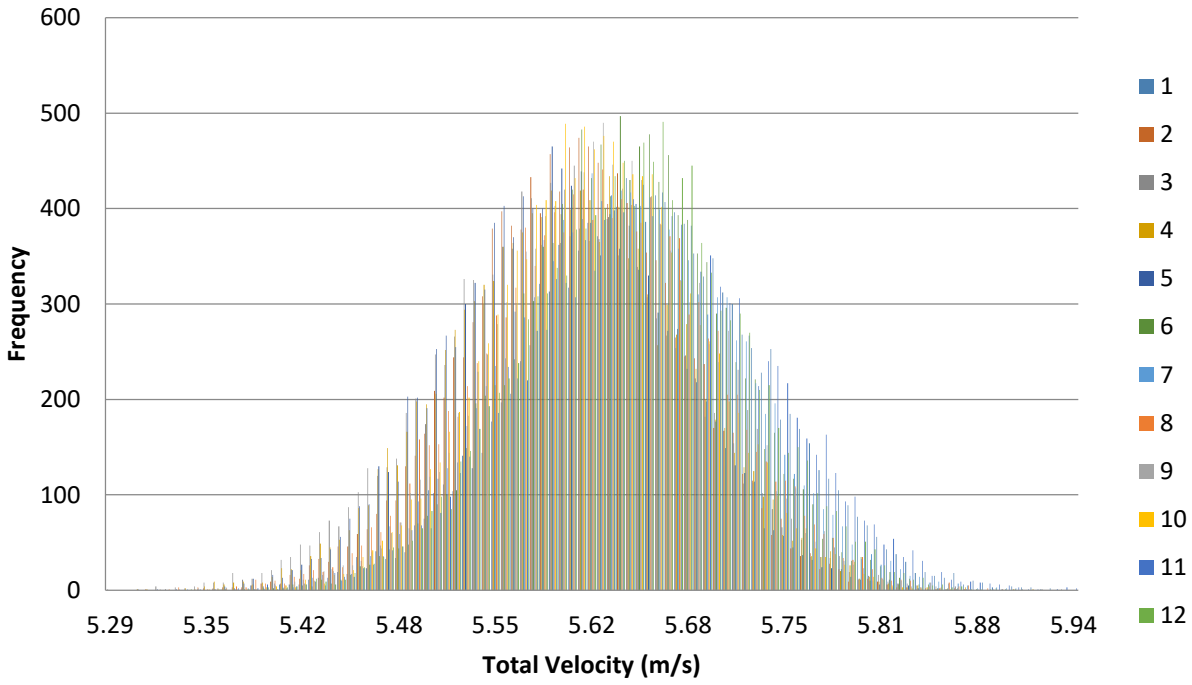


Figure 1. Velocity histogram for each interval (100 bins).

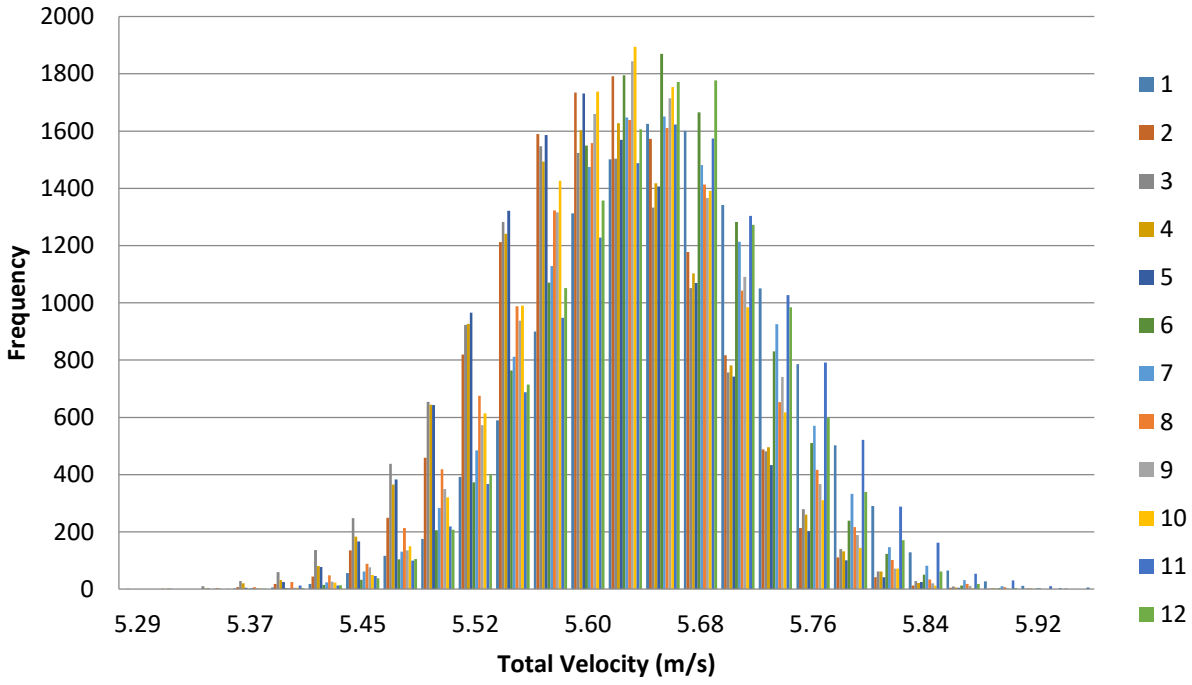
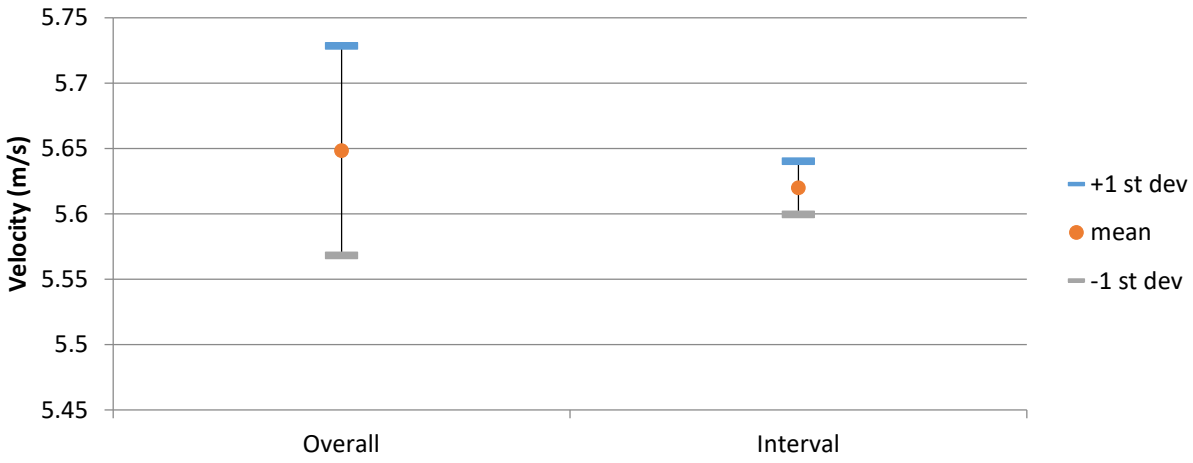
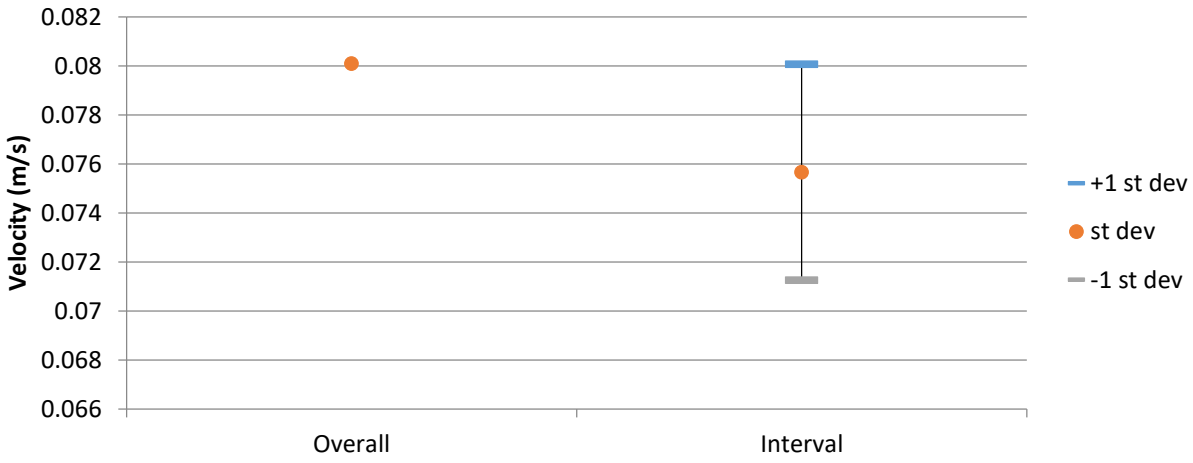


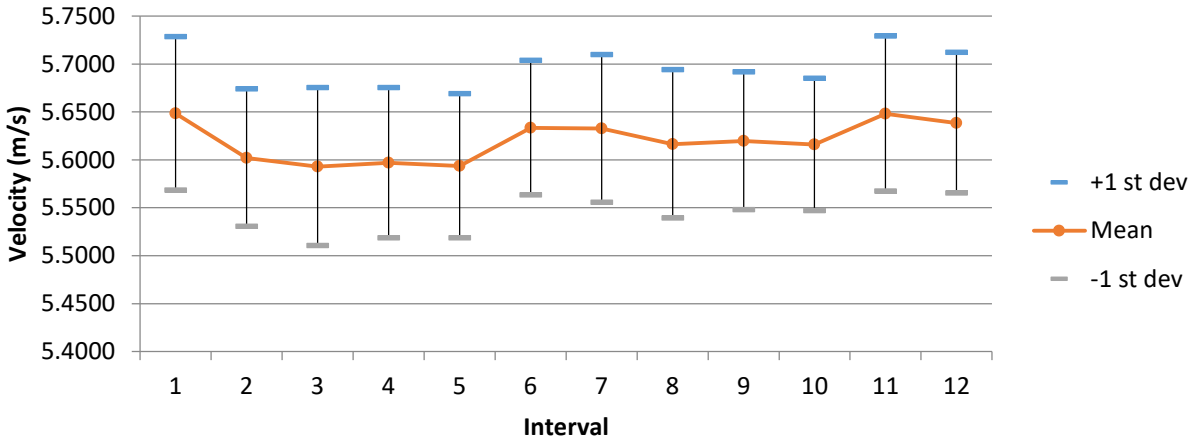
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 278
Blockage Condition: All buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 07:49:17.796

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.0365	11.5925	10.8028	0.1773
u	9.8000	11.4000	10.5841	0.1825
v	-1.1000	1.1300	-0.1303	0.2525
w	-3.5200	-1.2100	-2.1238	0.2902

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.5597	10.1937	10.8577	0.1729	1.5926
2	11.4512	10.0365	10.7978	0.1743	1.6143
3	11.4549	10.1435	10.7844	0.1754	1.6265
4	11.5925	10.1782	10.7993	0.1708	1.5819
5	11.4146	10.1690	10.8249	0.1686	1.5579
6	11.5091	10.1463	10.8236	0.1702	1.5722
7	11.4367	10.1684	10.8218	0.1680	1.5522
8	11.4138	10.1304	10.7962	0.1724	1.5973
9	11.4805	10.1364	10.7564	0.1811	1.6837
10	11.4227	10.1203	10.7840	0.1793	1.6627
11	11.5372	10.1438	10.8353	0.1778	1.6413
12	11.4720	10.0528	10.7525	0.1852	1.7221
		Average	10.8028	0.1747	1.6171
		St Dev	0.0314	0.0053	0.0502

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.6091	-0.0583	-2.2696	0.1842	0.2546	0.3367	1.7358	2.3997	3.1741
2	10.6299	-0.0438	-1.8705	0.1813	0.2074	0.2243	1.7054	1.9509	2.1100
3	10.5627	-0.2623	-2.1438	0.1812	0.1770	0.1859	1.7154	1.6762	1.7600
4	10.5776	-0.2413	-2.1535	0.1777	0.1539	0.1292	1.6798	1.4553	1.2217
5	10.5972	-0.0741	-2.1891	0.1787	0.1903	0.2033	1.6868	1.7956	1.9182
6	10.5983	-0.0319	-2.1826	0.1781	0.1707	0.1740	1.6808	1.6107	1.6415
7	10.5752	-0.0603	-2.2821	0.1753	0.1848	0.1682	1.6579	1.7471	1.5906
8	10.5703	-0.3459	-2.1431	0.1796	0.2998	0.1469	1.6986	2.8367	1.3896
9	10.5897	-0.3461	-1.8376	0.1845	0.1957	0.1503	1.7420	1.8481	1.4188
10	10.5880	-0.0362	-1.9997	0.1827	0.2322	0.3659	1.7259	2.1933	3.4560
11	10.5628	0.0708	-2.3592	0.1822	0.2820	0.4244	1.7251	2.6702	4.0175
12	10.5488	-0.1349	-2.0544	0.1883	0.1971	0.2462	1.7851	1.8683	2.3343

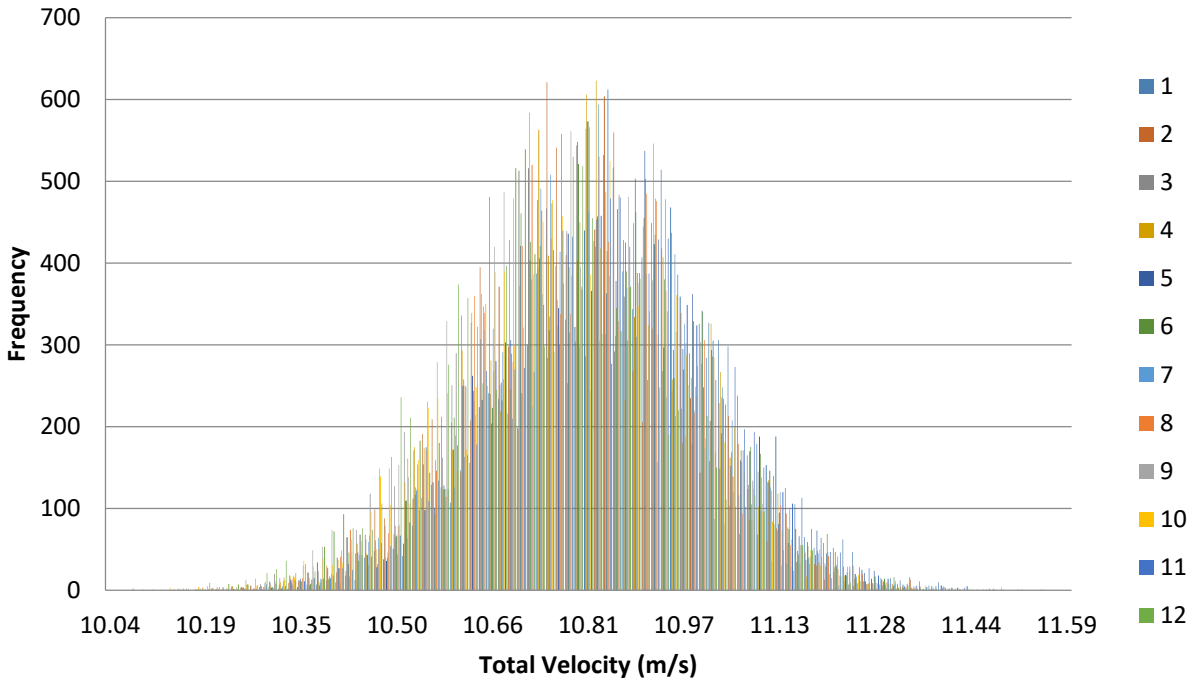


Figure 1. Velocity histogram for each interval (100 bins).

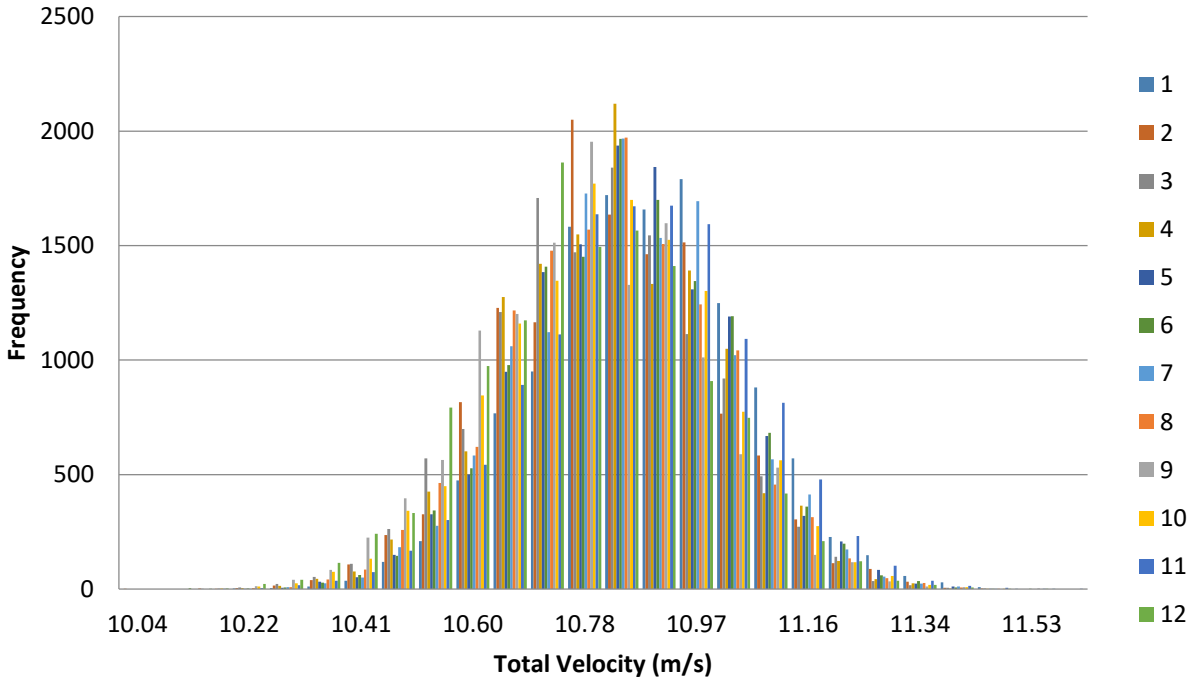
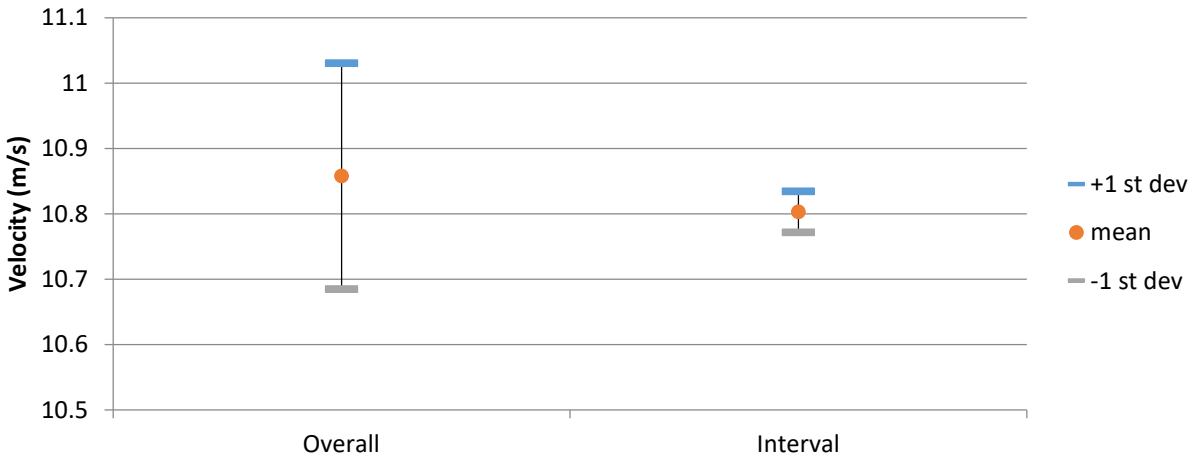
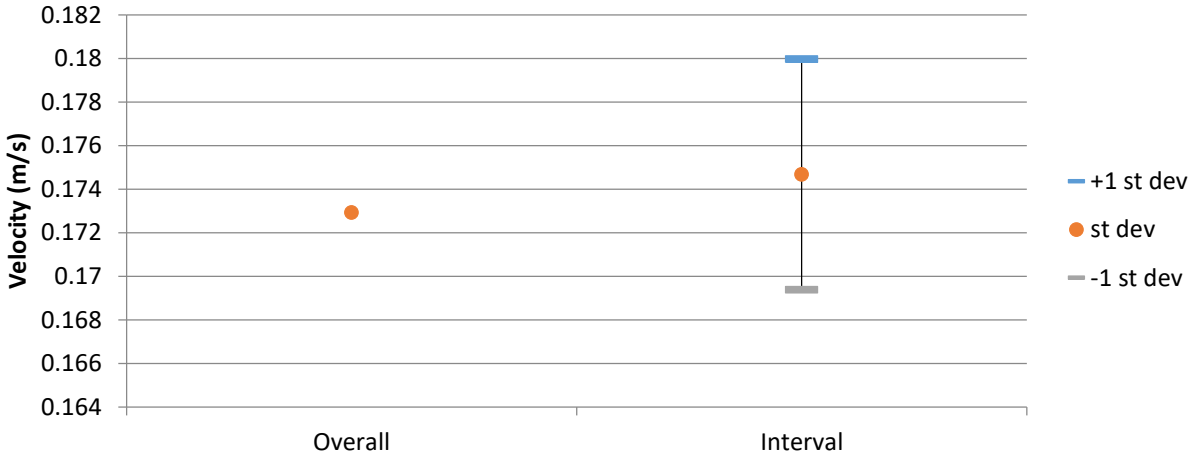


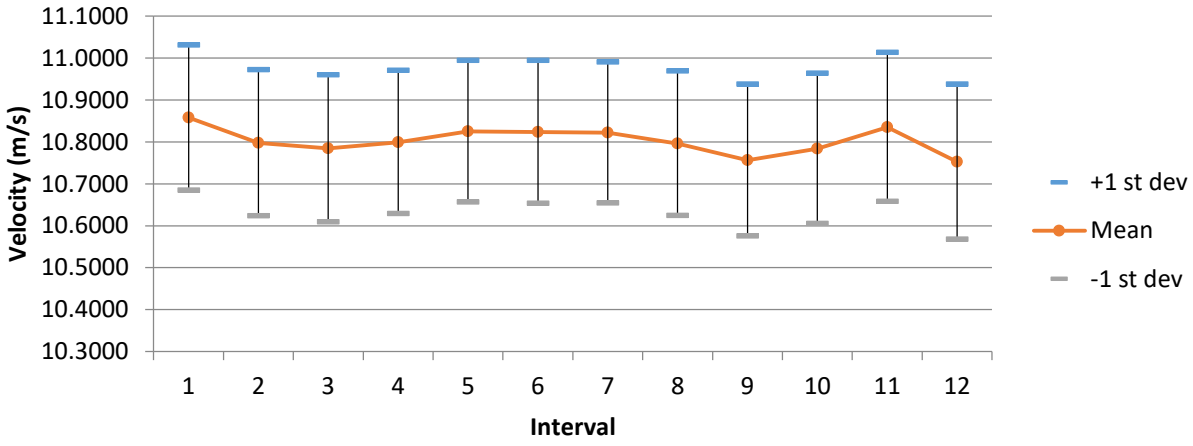
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 279
Blockage Condition: Existing Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 08:12:11.828

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.2515	5.9582	5.5847	0.0763
u	5.1000	5.9200	5.4668	0.0878
v	-0.6640	0.8030	0.1120	0.1957
w	-1.9000	-0.4770	-1.1022	0.1889

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.8496	5.3182	5.5829	0.0742	1.3298
2	5.8432	5.2582	5.5978	0.0740	1.3219
3	5.8909	5.3136	5.6048	0.0714	1.2739
4	5.9582	5.2822	5.5960	0.0835	1.4927
5	5.8364	5.2934	5.5840	0.0745	1.3337
6	5.8768	5.3148	5.5815	0.0719	1.2888
7	5.8698	5.2515	5.5760	0.0759	1.3610
8	5.8699	5.2944	5.5755	0.0808	1.4488
9	5.8393	5.2714	5.5681	0.0766	1.3762
10	5.8698	5.2806	5.5693	0.0762	1.3691
11	5.8843	5.3008	5.5967	0.0719	1.2843
12	5.8456	5.3108	5.5839	0.0740	1.3261
		Average	5.5847	0.0754	1.3505
		St Dev	0.0118	0.0036	0.0627

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.4440	0.1750	-1.1839	0.0864	0.2657	0.1651	1.5880	4.8804	3.0321
2	5.4186	-0.1043	-1.3820	0.0777	0.1492	0.1771	1.4344	2.7536	3.2679
3	5.4411	0.2878	-1.2878	0.0888	0.1697	0.1889	1.6315	3.1191	3.4724
4	5.5132	0.2300	-0.9105	0.0976	0.1160	0.1484	1.7706	2.1033	2.6918
5	5.4872	0.1076	-1.0182	0.0834	0.0981	0.1129	1.5193	1.7870	2.0573
6	5.4663	0.1267	-1.1110	0.0790	0.1070	0.0960	1.4460	1.9581	1.7556
7	5.4770	0.2361	-1.0100	0.0834	0.0874	0.0952	1.5219	1.5952	1.7383
8	5.4864	0.2640	-0.9434	0.0897	0.1186	0.0982	1.6341	2.1620	1.7891
9	5.4669	0.1254	-1.0432	0.0829	0.0895	0.0605	1.5162	1.6379	1.1060
10	5.4796	0.0191	-0.9854	0.0810	0.0976	0.0995	1.4788	1.7818	1.8165
11	5.4716	0.0503	-1.1658	0.0780	0.1076	0.1027	1.4262	1.9672	1.8765
12	5.4496	-0.1733	-1.1853	0.0824	0.1551	0.1481	1.5124	2.8465	2.7170

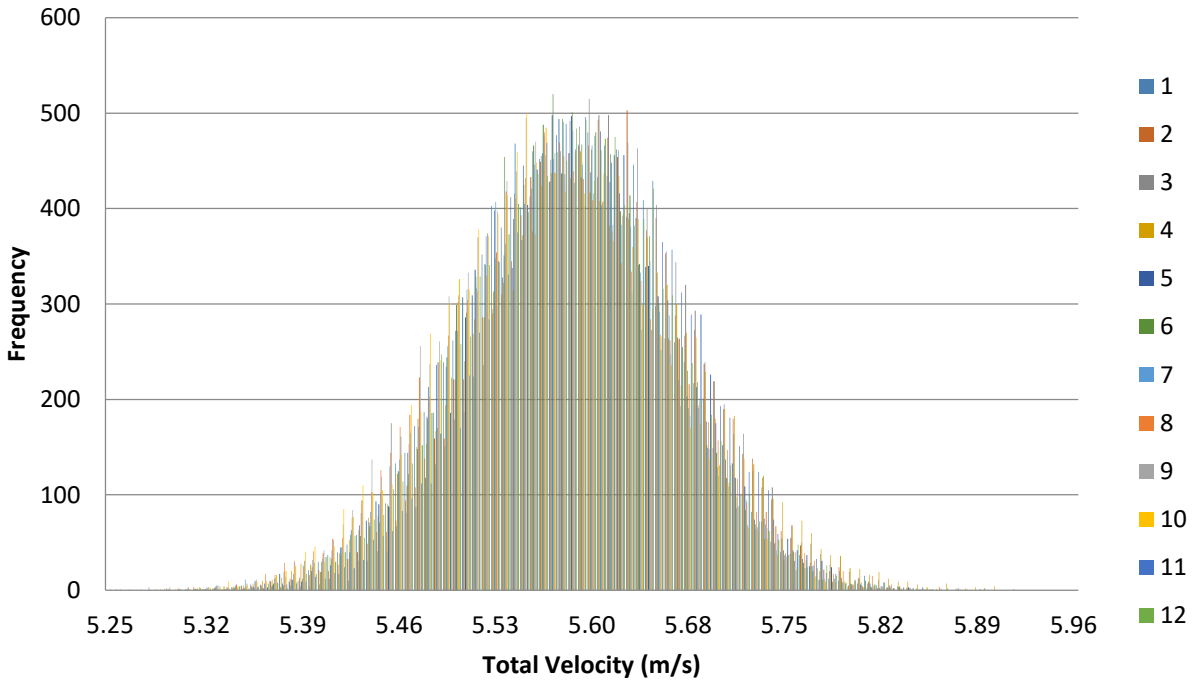


Figure 1. Velocity histogram for each interval (100 bins).

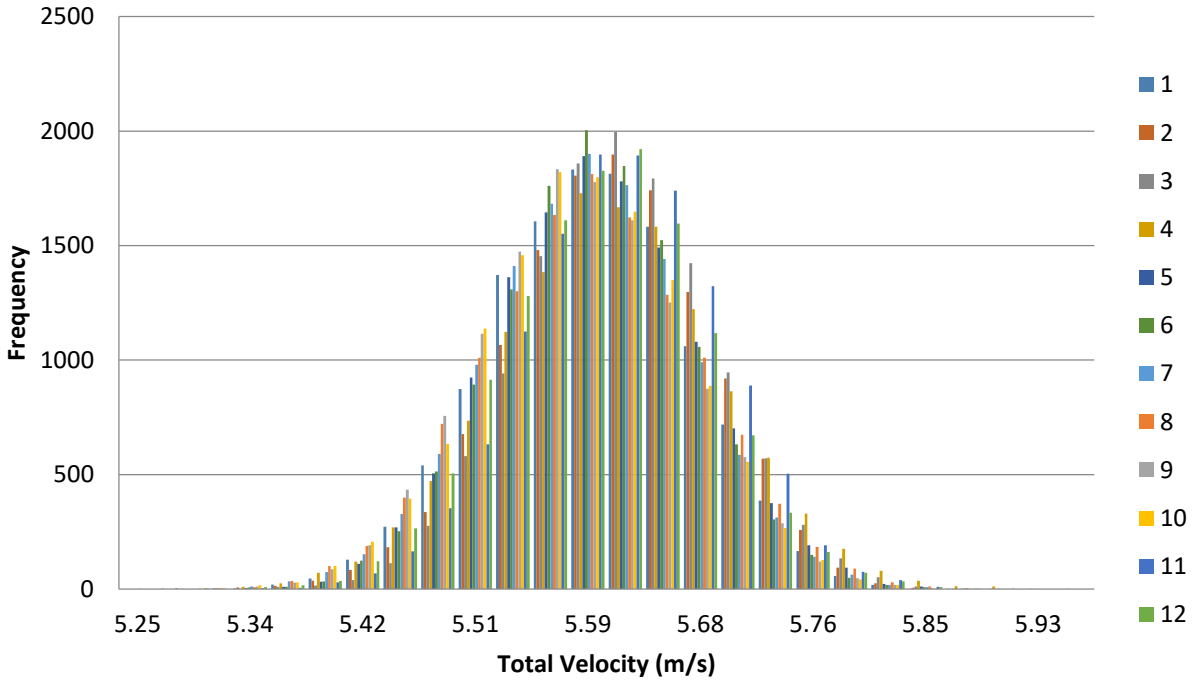
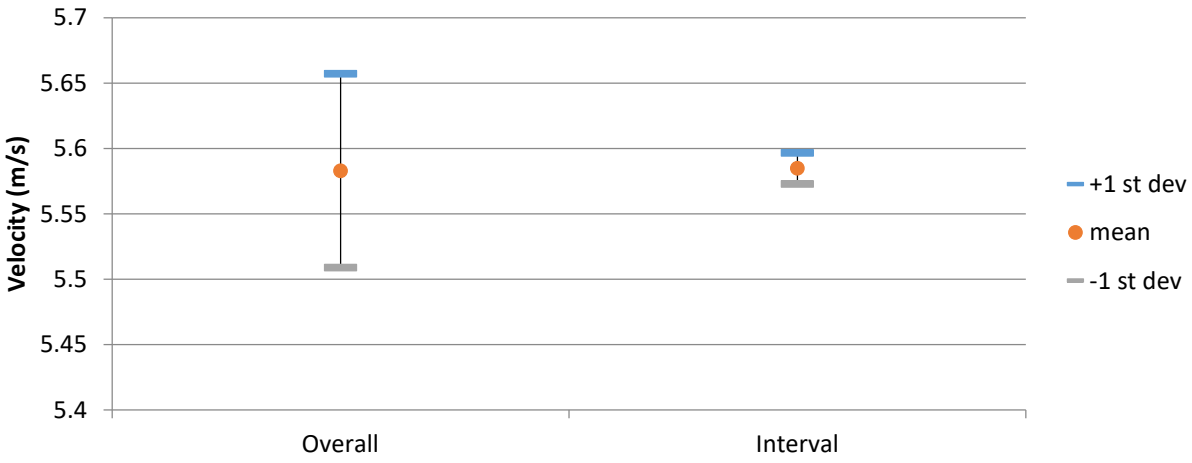
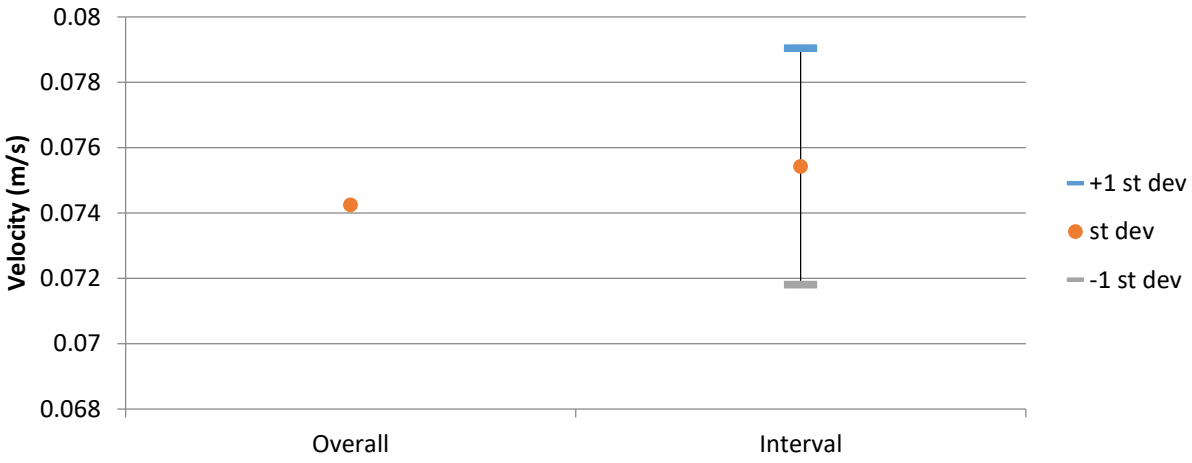


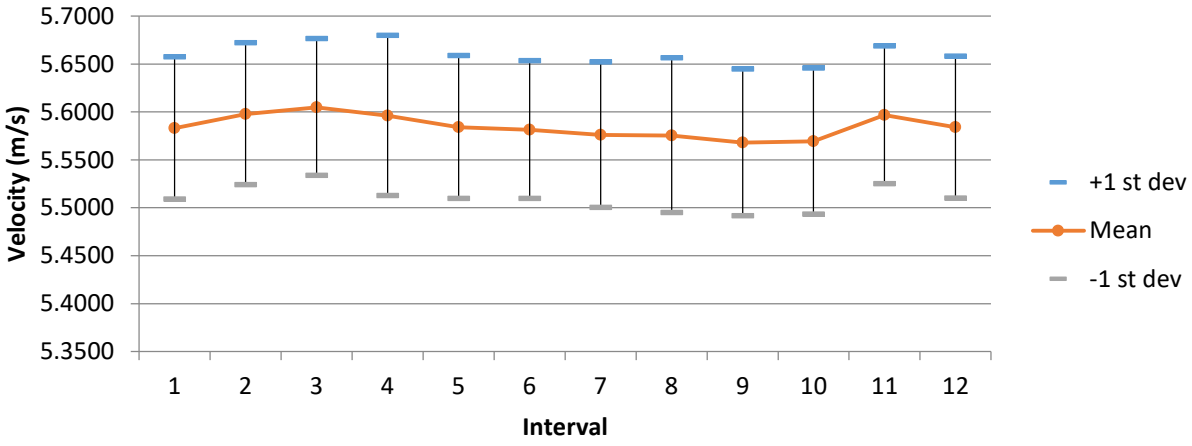
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 280
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 08:18:09.968

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.0474	11.5115	10.8347	0.1748
u	9.7900	11.3000	10.5628	0.1757
v	-0.8490	1.8000	0.1364	0.2711
w	-3.6600	-1.1500	-2.3693	0.3342

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.4594	10.0724	10.7714	0.1723	1.5993
2	11.4627	10.0474	10.7416	0.1770	1.6474
3	11.4922	10.0848	10.7685	0.1691	1.5704
4	11.4323	10.2495	10.8496	0.1606	1.4807
5	11.4264	10.2199	10.8508	0.1656	1.5258
6	11.4846	10.2229	10.9017	0.1645	1.5085
7	11.4674	10.2826	10.9044	0.1620	1.4856
8	11.4893	10.2213	10.8369	0.1671	1.5417
9	11.4318	10.1062	10.7887	0.1704	1.5798
10	11.4235	10.1832	10.8149	0.1582	1.4630
11	11.4360	10.2945	10.8723	0.1583	1.4560
12	11.5115	10.2599	10.9153	0.1620	1.4844
		Average	10.8347	0.1656	1.5285
		St Dev	0.0582	0.0058	0.0575

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.5658	-0.0261	-2.0791	0.1791	0.1549	0.1966	1.6950	1.4660	1.8604
2	10.5589	-0.0216	-1.9585	0.1854	0.1721	0.1501	1.7561	1.6296	1.4216
3	10.5425	0.0933	-2.1784	0.1783	0.1994	0.1409	1.6915	1.8910	1.3367
4	10.5708	0.3025	-2.4050	0.1692	0.2161	0.2166	1.6008	2.0443	2.0490
5	10.5774	0.4982	-2.3405	0.1811	0.2641	0.2384	1.7117	2.4969	2.2541
6	10.5773	0.3883	-2.5599	0.1801	0.2950	0.4152	1.7023	2.7892	3.9253
7	10.5673	0.0126	-2.6717	0.1672	0.1910	0.2492	1.5820	1.8072	2.3578
8	10.5593	0.0117	-2.4226	0.1742	0.1712	0.1941	1.6501	1.6218	1.8379
9	10.5889	0.1806	-2.0419	0.1803	0.1597	0.1987	1.7032	1.5083	1.8764
10	10.5456	0.1107	-2.3854	0.1694	0.1755	0.1221	1.6059	1.6638	1.1581
11	10.5371	-0.0270	-2.6614	0.1676	0.2326	0.1912	1.5909	2.2074	1.8150
12	10.5626	0.1131	-2.7273	0.1681	0.2705	0.2222	1.5919	2.5613	2.1041

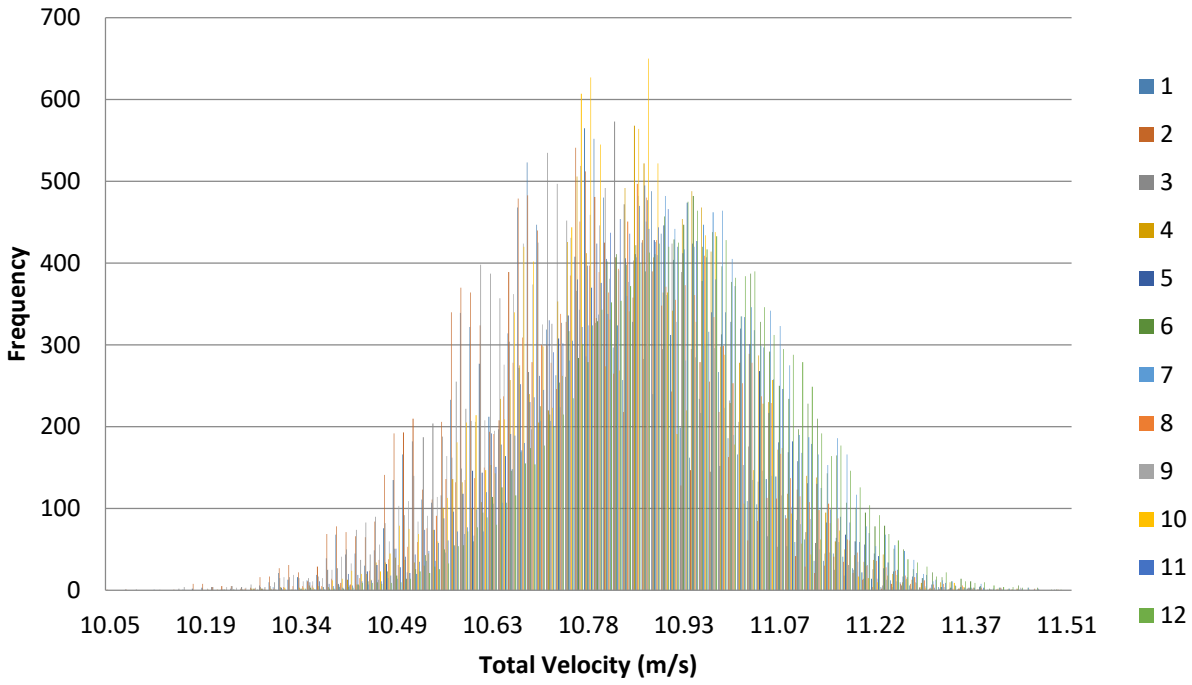


Figure 1. Velocity histogram for each interval (100 bins).

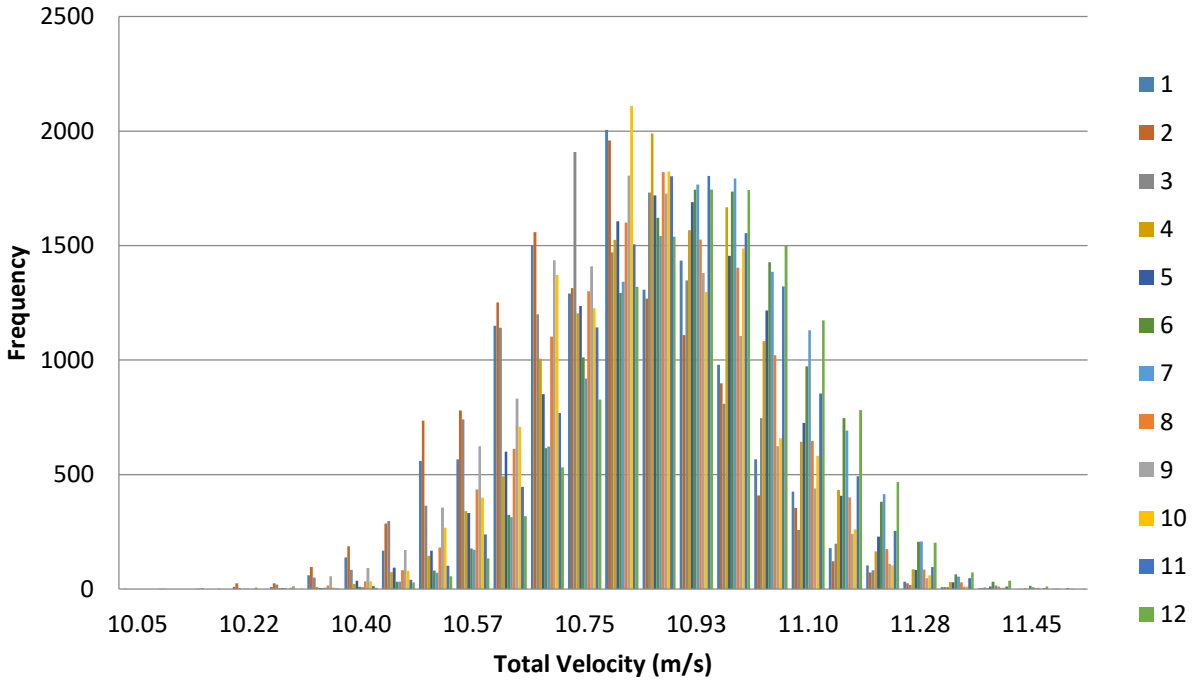
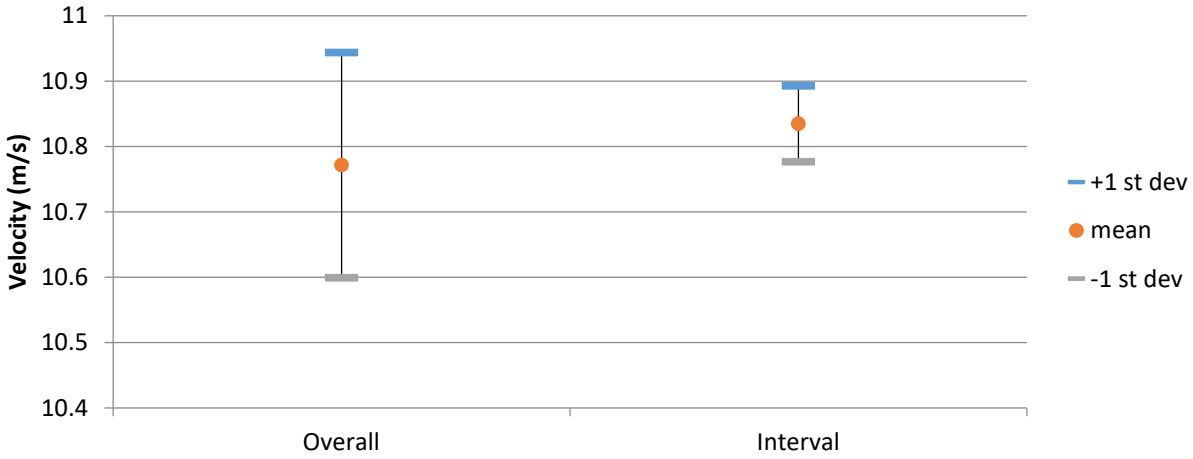
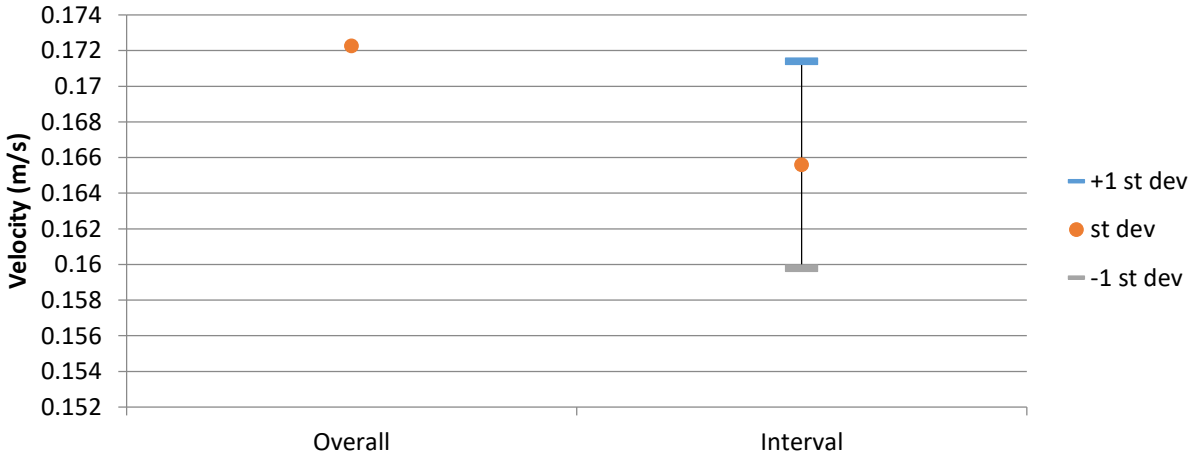


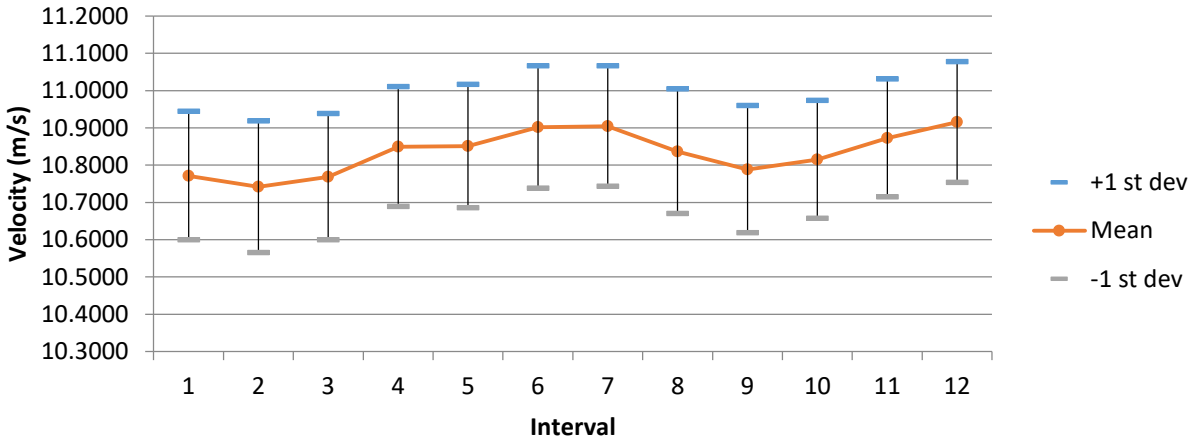
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 281
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 08:29:44.265

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.1550	5.8755	5.5223	0.0796
u	5.0500	5.8400	5.4261	0.0919
v	-0.6450	0.9190	0.1024	0.1746
w	-1.7800	-0.4630	-0.9877	0.1886

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.7845	5.2808	5.5386	0.0714	1.2892
2	5.8171	5.2261	5.5178	0.0776	1.4067
3	5.8223	5.1783	5.5052	0.0774	1.4068
4	5.8333	5.2497	5.5361	0.0761	1.3747
5	5.7810	5.1999	5.5074	0.0743	1.3491
6	5.8127	5.2243	5.5103	0.0774	1.4050
7	5.7986	5.1992	5.5241	0.0807	1.4605
8	5.8596	5.1550	5.5076	0.0786	1.4269
9	5.7940	5.2337	5.5011	0.0767	1.3950
10	5.7879	5.2010	5.5153	0.0791	1.4334
11	5.8716	5.2297	5.5454	0.0830	1.4972
12	5.8755	5.2478	5.5593	0.0787	1.4155
		Average	5.5223	0.0776	1.4050
		St Dev	0.0185	0.0029	0.0505

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.3914	0.1864	-1.2347	0.0803	0.1557	0.1557	1.4886	2.8878	2.8871
2	5.4011	-0.0731	-1.0915	0.0878	0.1782	0.2105	1.6253	3.3000	3.8977
3	5.3996	-0.0624	-1.0614	0.0823	0.0917	0.1132	1.5241	1.6976	2.0969
4	5.4148	0.0922	-1.1287	0.0829	0.1186	0.1738	1.5302	2.1901	3.2096
5	5.4095	0.2329	-0.9913	0.0821	0.1518	0.0837	1.5175	2.8063	1.5466
6	5.4221	0.2324	-0.9457	0.0852	0.0830	0.0888	1.5708	1.5299	1.6378
7	5.4589	0.1673	-0.8154	0.0893	0.0876	0.1169	1.6360	1.6039	2.1407
8	5.4302	0.0502	-0.9099	0.0845	0.0796	0.0890	1.5565	1.4661	1.6392
9	5.4054	-0.0457	-1.0141	0.0806	0.0907	0.0668	1.4903	1.6786	1.2365
10	5.4133	0.1796	-1.0251	0.0870	0.1360	0.1093	1.6079	2.5116	2.0191
11	5.4553	0.2541	-0.9189	0.1052	0.1931	0.2020	1.9278	3.5390	3.7030
12	5.5110	0.0150	-0.7160	0.0807	0.1218	0.0784	1.4637	2.2104	1.4222

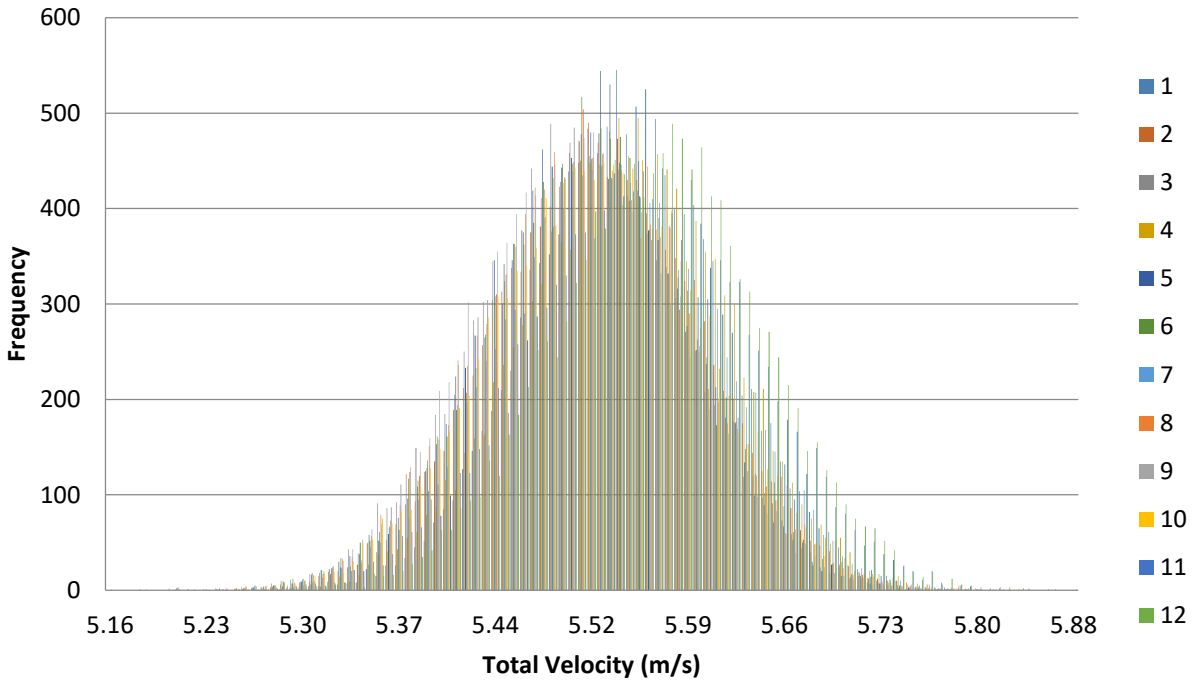


Figure 1. Velocity histogram for each interval (100 bins).

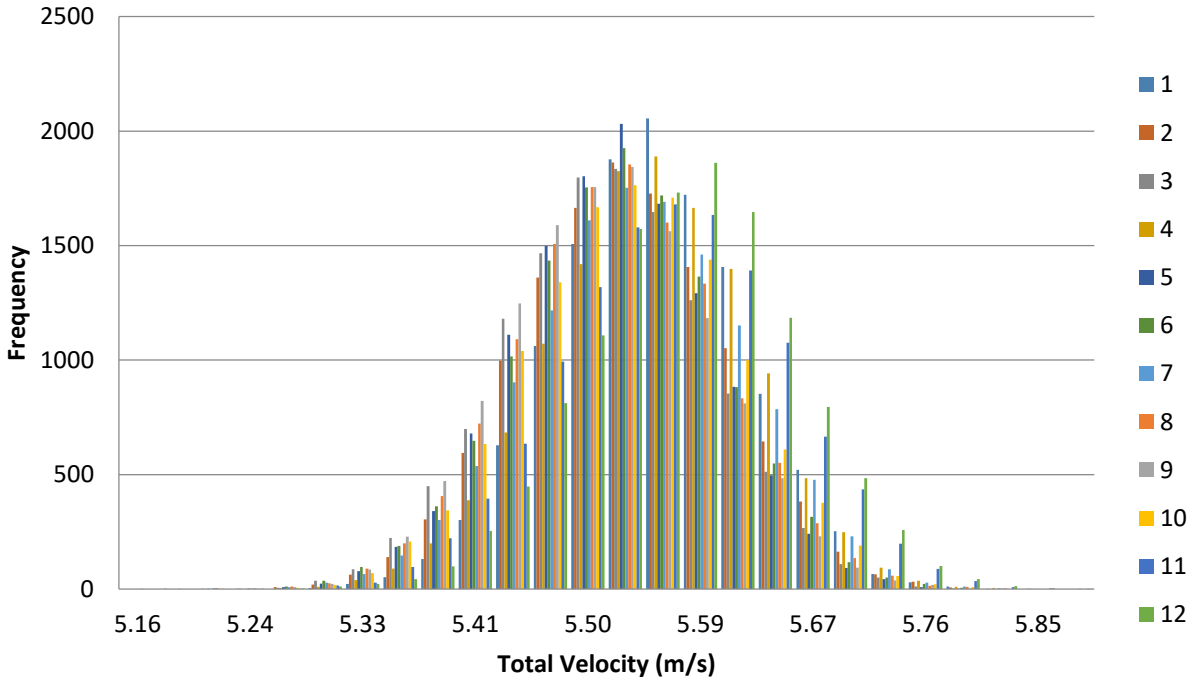
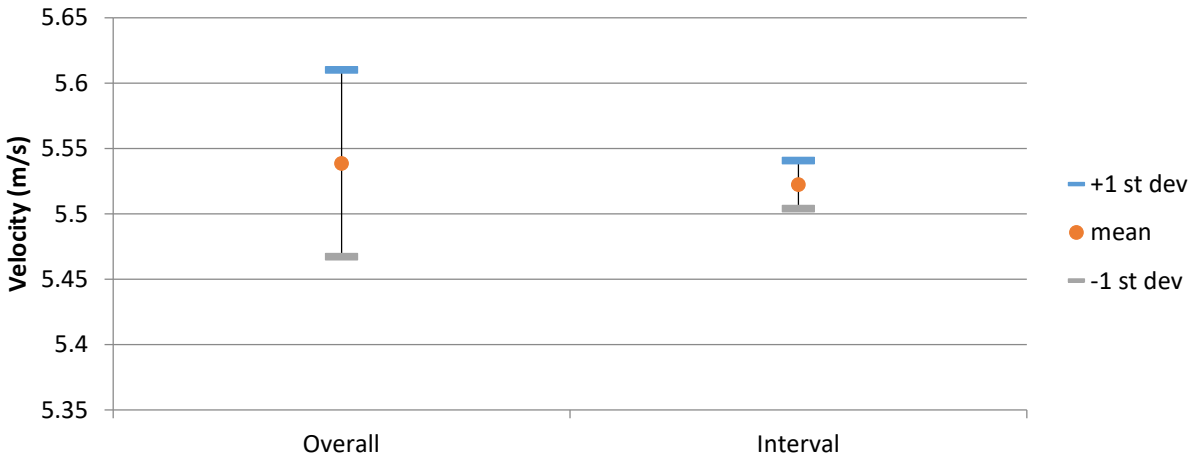
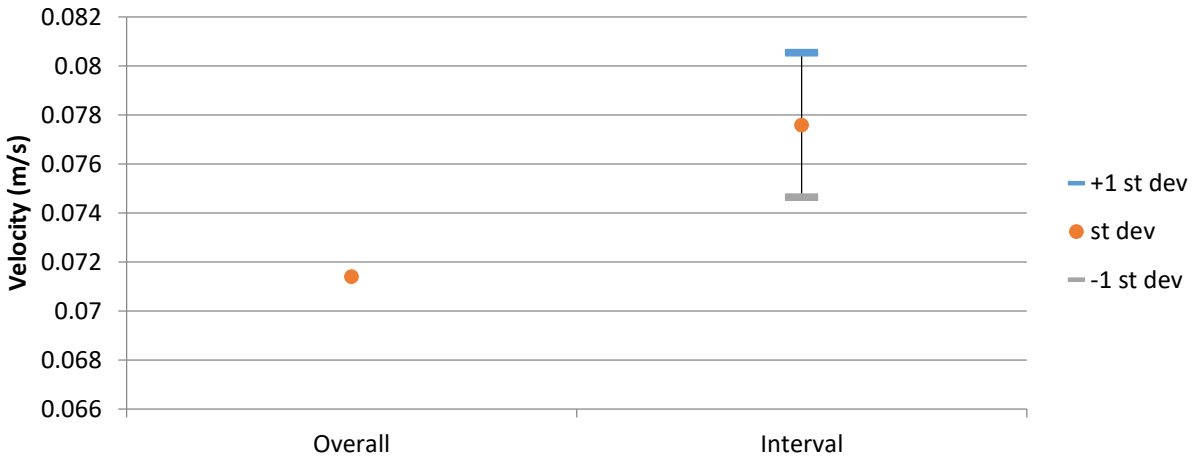


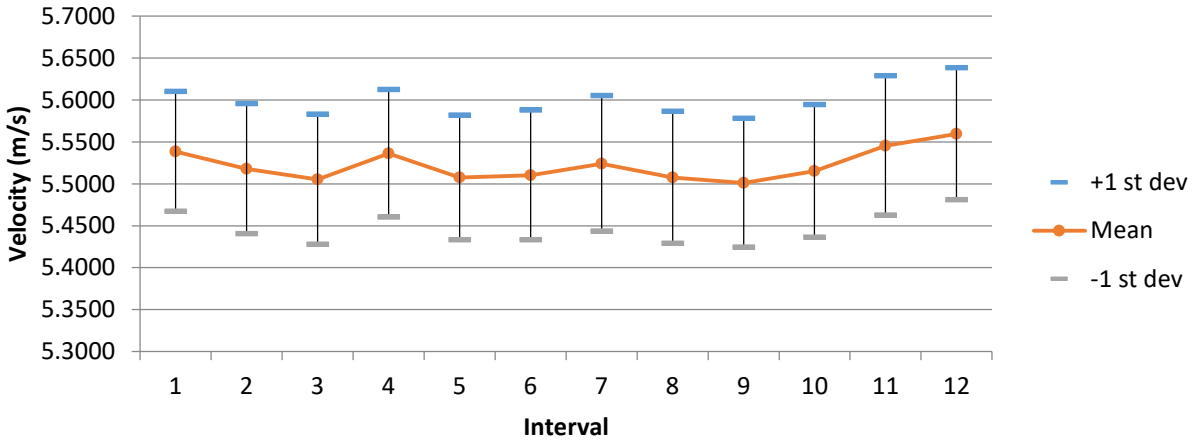
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 282
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 08:33:54.328

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.0084	12.4462	10.8199	0.1907
u	8.9000	11.4000	10.5095	0.2138
v	-1.5300	5.9400	-0.0005	0.7745
w	-5.4400	-0.5910	-2.4079	0.4627

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.3584	10.1398	10.7692	0.1666	1.5470
2	11.3916	10.1784	10.7983	0.1669	1.5457
3	11.4550	10.1848	10.8170	0.1725	1.5948
4	11.4635	10.1439	10.7927	0.1631	1.5110
5	11.3831	10.0485	10.7718	0.1619	1.5026
6	11.3963	10.0793	10.7493	0.1695	1.5770
7	11.3699	10.0084	10.7949	0.1738	1.6100
8	11.3669	10.1072	10.7848	0.1656	1.5358
9	11.4972	10.1336	10.7884	0.1648	1.5279
10	11.4166	10.2529	10.8532	0.1613	1.4864
11	12.4462	10.1900	10.9530	0.2455	2.2412
12	11.8184	10.1944	10.9664	0.2105	1.9193
		Average	10.8199	0.1768	1.6332
		St Dev	0.0702	0.0253	0.2133

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.5299	-0.2732	-2.2290	0.1727	0.1429	0.1750	1.6396	1.3573	1.6615
2	10.5455	-0.1877	-2.3014	0.1730	0.1578	0.1921	1.6405	1.4961	1.8219
3	10.5576	0.0046	-2.3117	0.1751	0.2445	0.3727	1.6589	2.3158	3.5306
4	10.5476	-0.1185	-2.2683	0.1695	0.2093	0.1610	1.6072	1.9845	1.5261
5	10.5135	-0.3332	-2.2983	0.1678	0.2315	0.2214	1.5960	2.2019	2.1055
6	10.5303	-0.4887	-2.0828	0.1751	0.2037	0.2001	1.6628	1.9347	1.9007
7	10.4910	-0.6037	-2.4180	0.1743	0.3365	0.3799	1.6615	3.2080	3.6209
8	10.4701	-0.6820	-2.4700	0.1735	0.2336	0.2565	1.6570	2.2315	2.4499
9	10.5479	-0.1564	-2.2380	0.1731	0.2576	0.1689	1.6413	2.4422	1.6011
10	10.5123	0.1405	-2.6619	0.1727	0.3461	0.2321	1.6433	3.2923	2.2080
11	10.4041	1.4069	-2.7688	0.3931	1.0836	0.9002	3.7785	10.4148	8.6527
12	10.4644	1.2844	-2.8456	0.2703	0.6700	0.7308	2.5833	6.4023	6.9833

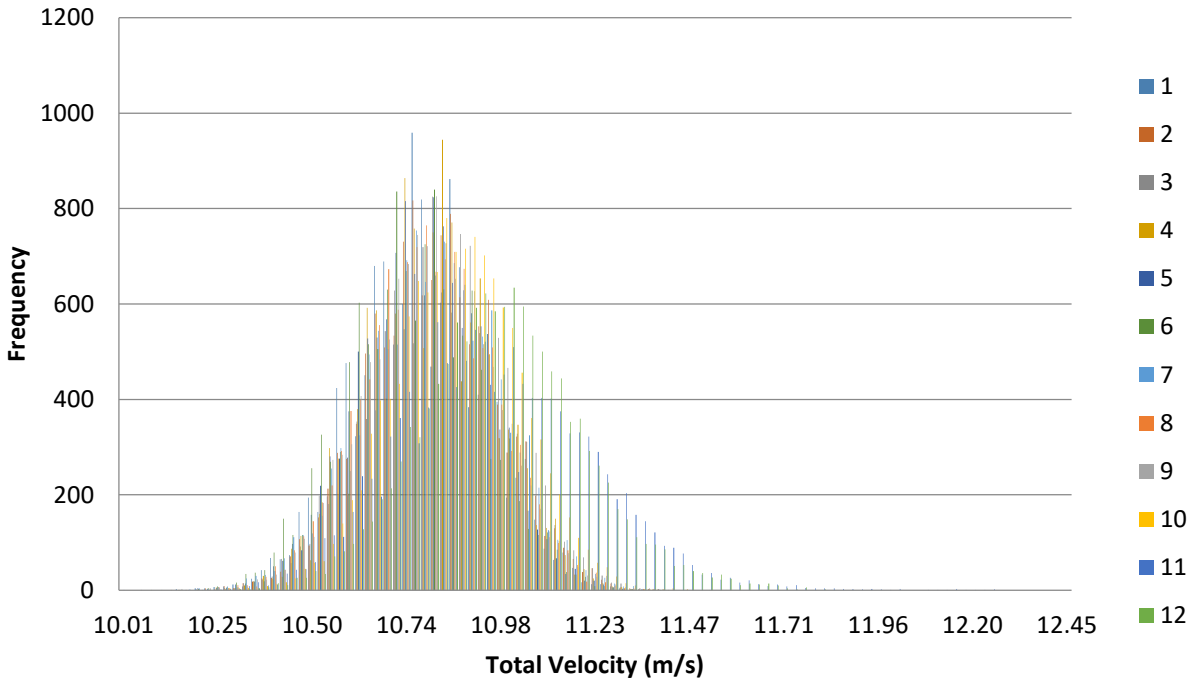


Figure 1. Velocity histogram for each interval (100 bins).

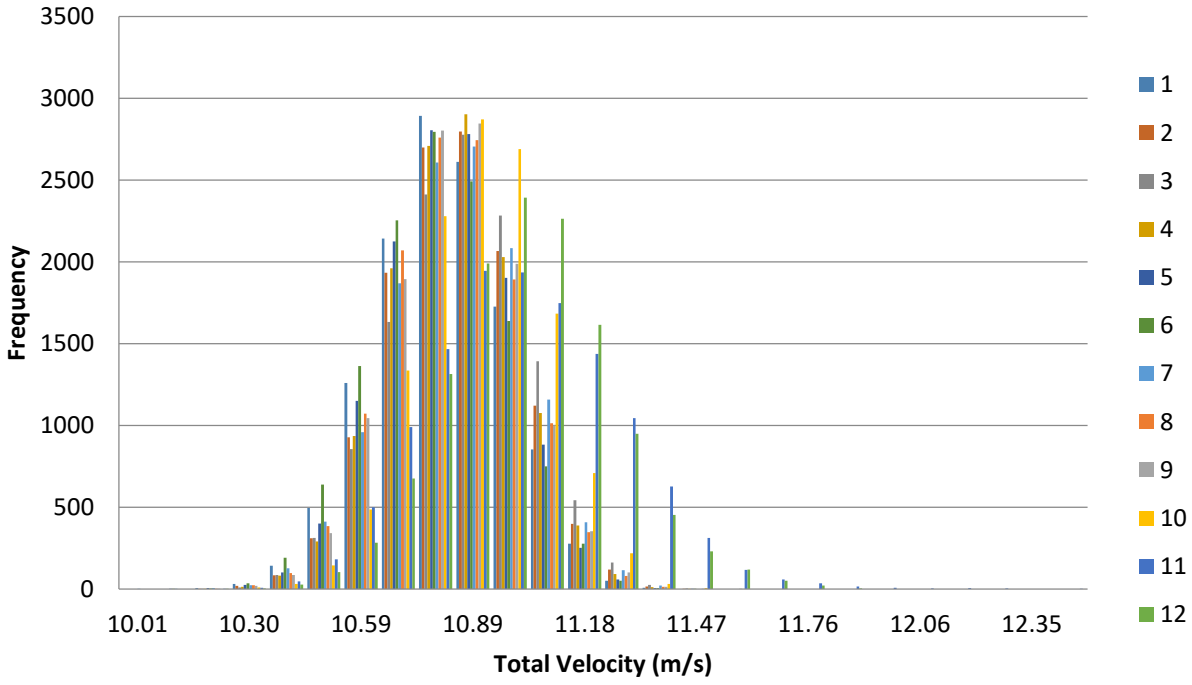
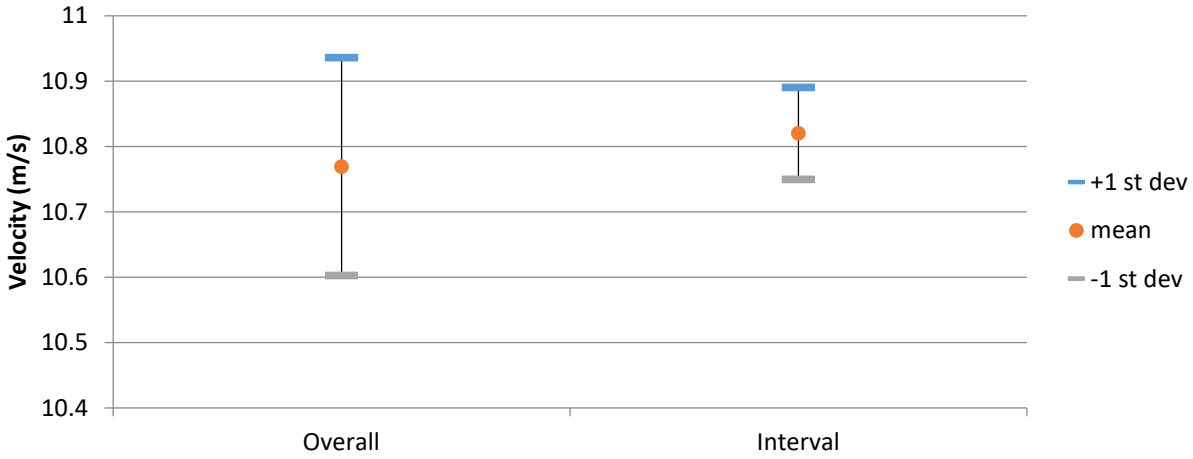
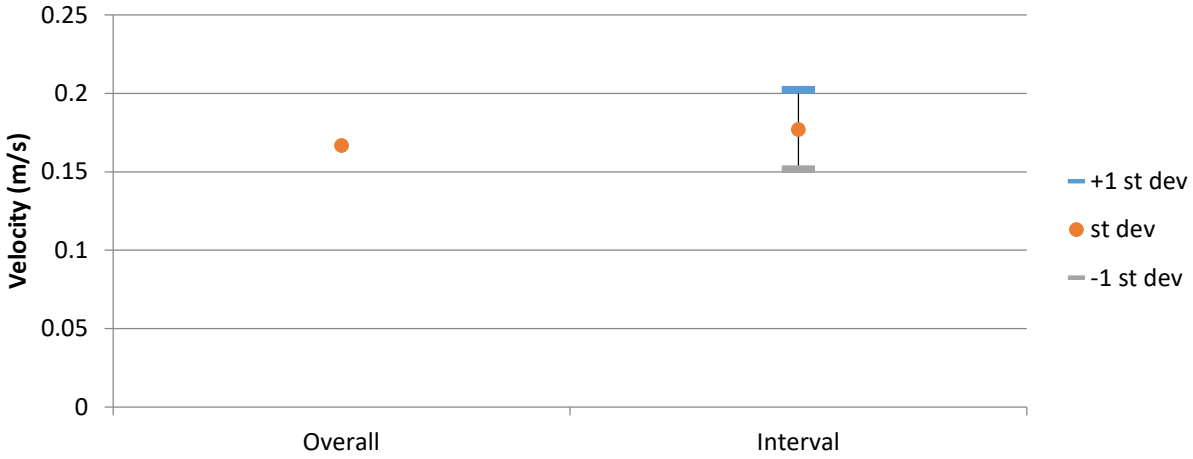


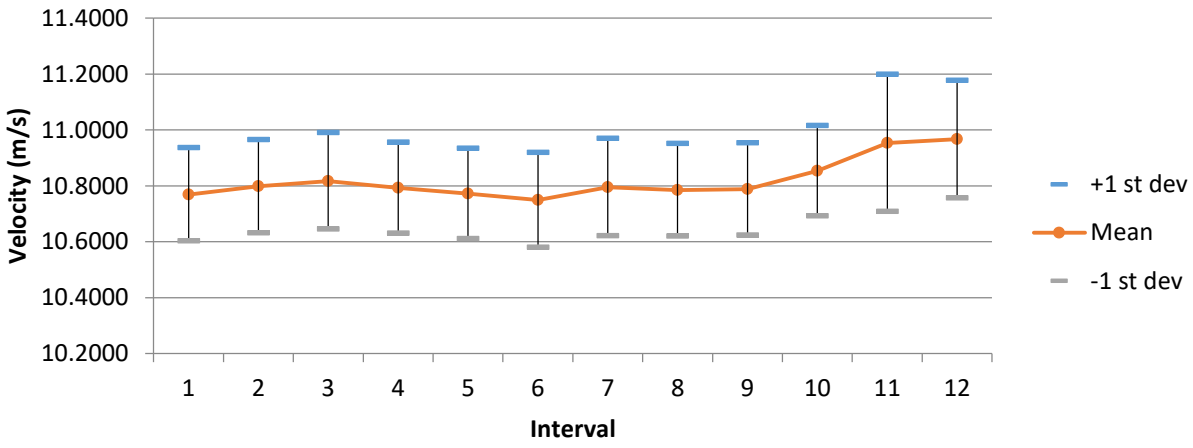
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 283
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 08:38:16.828

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.0121	6.8644	5.6285	0.1552
u	4.1900	6.3900	5.3659	0.2514
v	-1.8000	3.3000	0.5103	0.5753
w	-3.7100	0.6000	-1.3267	0.7043

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	6.7455	5.2311	5.8091	0.2027	3.4893
2	6.5531	5.1975	5.7583	0.1588	2.7570
3	6.8644	5.0270	5.6971	0.1644	2.8854
4	6.3172	5.0121	5.6584	0.1184	2.0931
5	5.8931	5.1938	5.5529	0.0903	1.6254
6	6.3622	5.0732	5.6057	0.1268	2.2622
7	6.5261	5.1938	5.5953	0.0928	1.6584
8	6.1103	5.1492	5.5591	0.1232	2.2169
9	6.1540	5.2937	5.6542	0.1183	2.0930
10	6.1773	5.0569	5.5990	0.1256	2.2433
11	5.8854	5.1914	5.5419	0.0847	1.5278
12	5.7585	5.2072	5.5109	0.0821	1.4892
		Average	5.6285	0.1240	2.1951
		St Dev	0.0905	0.0363	0.5811

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.5195	0.4518	-1.3900	0.3273	0.6367	0.8207	5.9303	11.5354	14.8692
2	5.2399	0.8913	-2.1196	0.2425	0.5135	0.3426	4.6271	9.8008	6.5380
3	5.0159	1.0961	-2.3801	0.2311	0.5150	0.3739	4.6075	10.2670	7.4542
4	5.4061	0.9492	-1.1674	0.1799	0.4680	0.5386	3.3270	8.6565	9.9635
5	5.4417	0.4997	-0.8861	0.1059	0.1866	0.3878	1.9463	3.4297	7.1271
6	5.2346	0.7422	-1.7585	0.2293	0.3626	0.4593	4.3802	6.9264	8.7739
7	5.3940	0.6425	-1.2329	0.1462	0.2269	0.4630	2.7102	4.2063	8.5826
8	5.1297	0.8457	-1.8867	0.1875	0.4437	0.3137	3.6543	8.6504	6.1152
9	5.5792	0.0802	-0.7469	0.1470	0.2896	0.4314	2.6340	5.1912	7.7331
10	5.5396	-0.4092	-0.5647	0.1215	0.3099	0.2824	2.1926	5.5946	5.0976
11	5.4739	0.0097	-0.8401	0.0931	0.1579	0.1303	1.7016	2.8846	2.3802
12	5.4168	0.3242	-0.9481	0.0907	0.1212	0.0904	1.6741	2.2376	1.6696

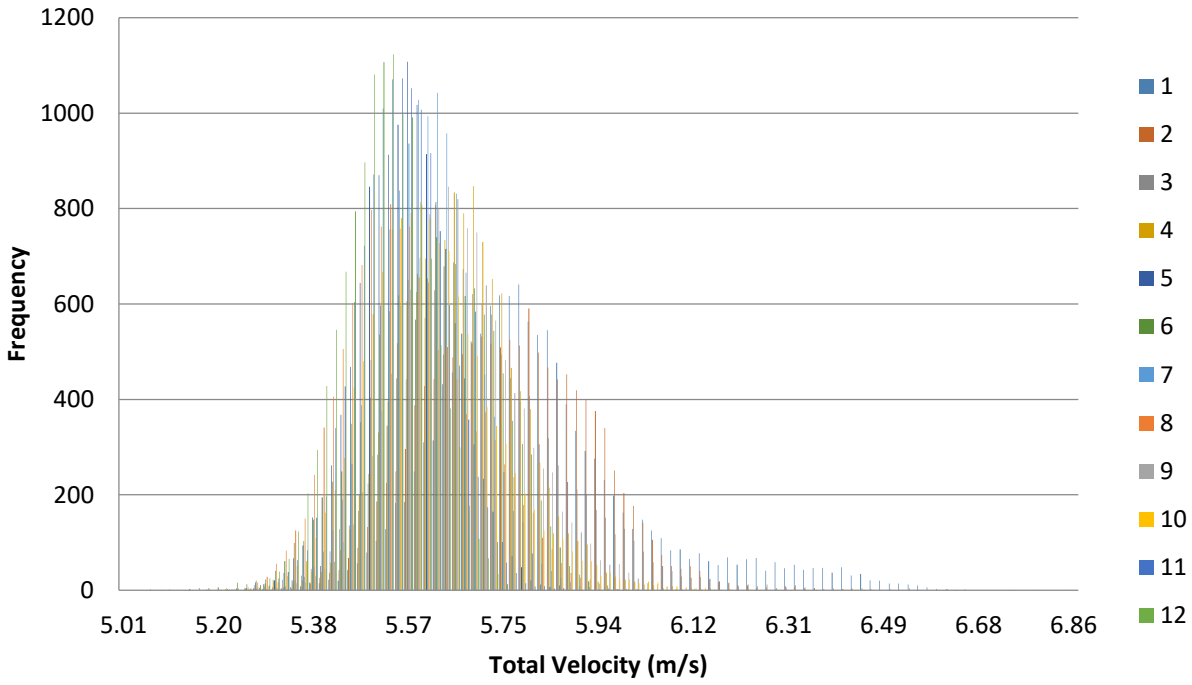


Figure 1. Velocity histogram for each interval (100 bins).

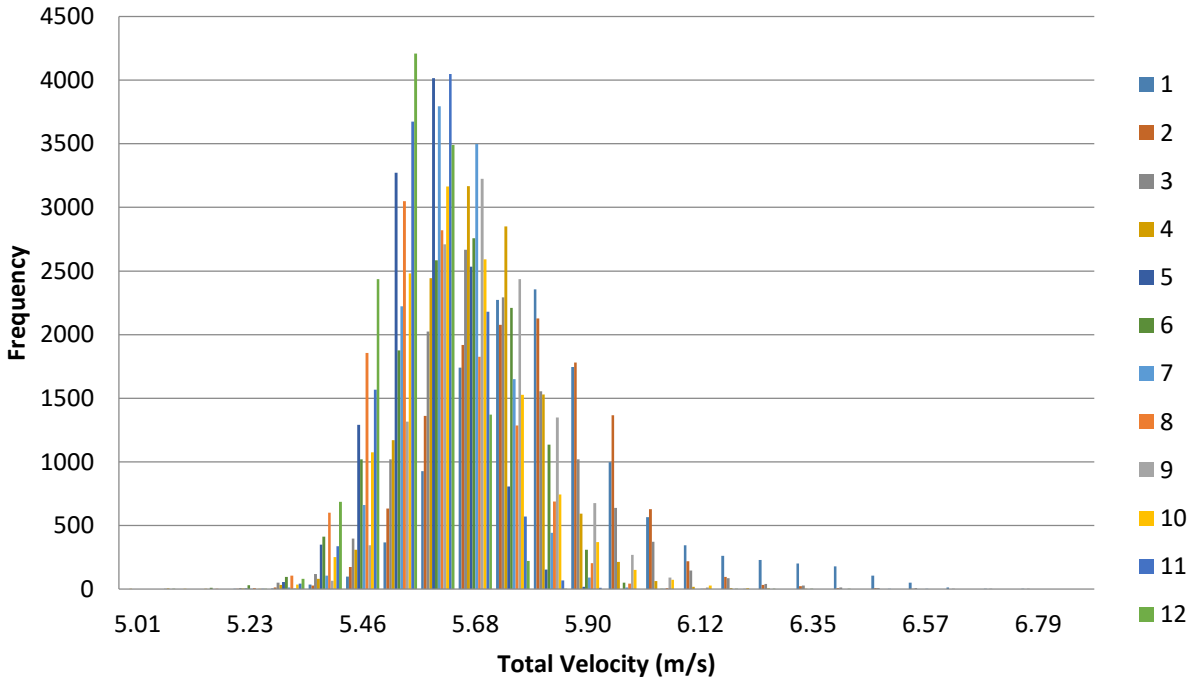
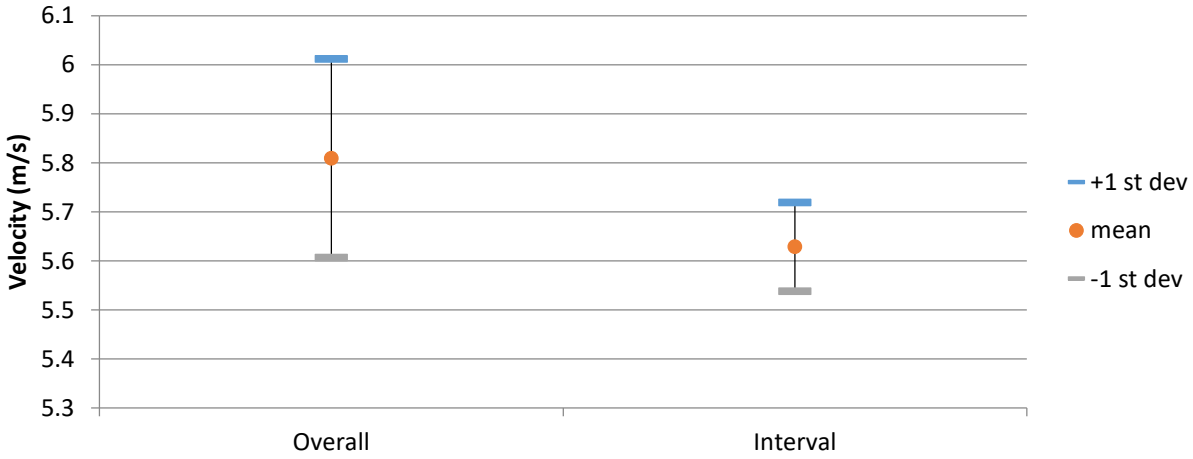
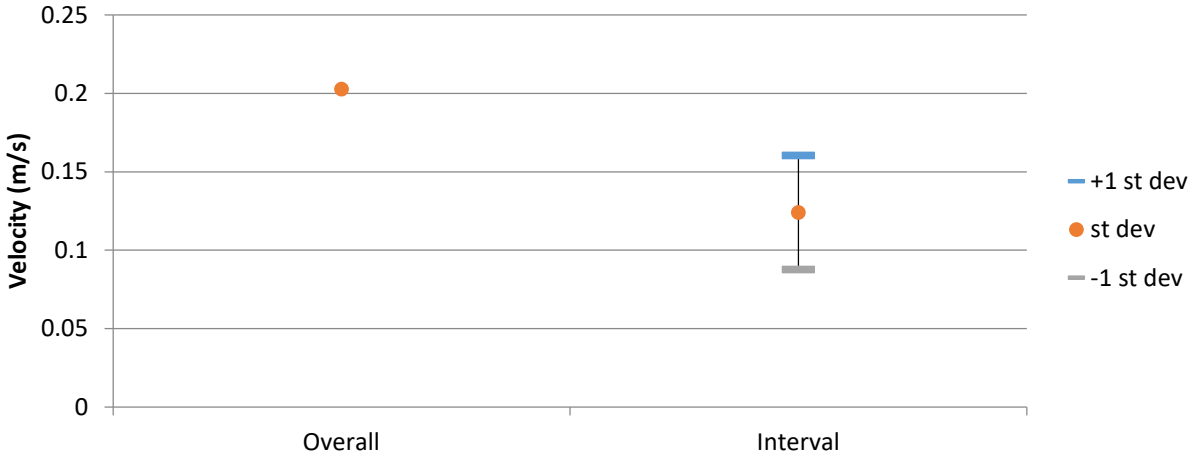


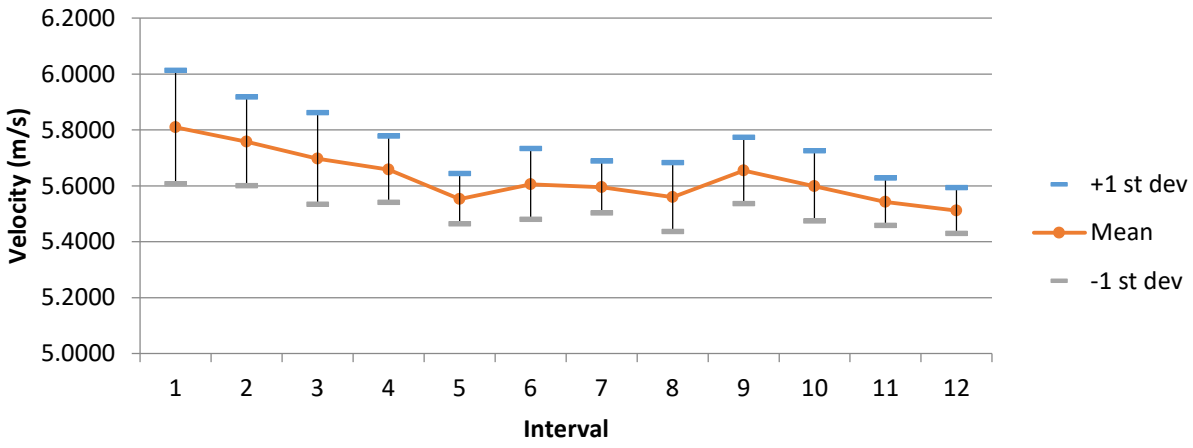
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 284
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 08:43:36.750

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.0613	11.6996	10.8366	0.1782
u	9.6900	11.4000	10.5653	0.1841
v	-3.4100	1.0500	-0.2819	0.4523
w	-4.2900	-0.1830	-2.3122	0.4184

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.5181	10.1808	10.8406	0.1774	1.6361
2	11.3882	10.1955	10.8254	0.1695	1.5659
3	11.6225	10.2757	10.8661	0.1610	1.4813
4	11.4864	10.1491	10.8538	0.1748	1.6100
5	11.5761	10.2582	10.9265	0.1657	1.5167
6	11.4255	10.1975	10.8249	0.1682	1.5534
7	11.4987	10.1826	10.8042	0.1724	1.5959
8	11.4016	10.1465	10.8103	0.1724	1.5944
9	11.5052	10.1302	10.7949	0.1684	1.5597
10	11.3759	10.1126	10.8041	0.1696	1.5696
11	11.4532	10.0613	10.8150	0.1823	1.6855
12	11.6996	10.1929	10.8738	0.2079	1.9115
		Average	10.8366	0.1741	1.6067
		St Dev	0.0380	0.0120	0.1049

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.5559	-0.0543	-2.3799	0.1915	0.5014	0.4087	1.8140	4.7499	3.8719
2	10.6001	-0.0885	-2.1707	0.1763	0.2251	0.2321	1.6631	2.1233	2.1895
3	10.5659	-0.0703	-2.5069	0.1683	0.3099	0.2148	1.5930	2.9330	2.0333
4	10.5534	0.0536	-2.4992	0.1766	0.1999	0.3758	1.6733	1.8943	3.5605
5	10.5442	-0.0894	-2.8410	0.1825	0.2017	0.2861	1.7308	1.9126	2.7131
6	10.5724	-0.2511	-2.2878	0.1724	0.2129	0.2431	1.6304	2.0138	2.2995
7	10.5327	-0.5742	-2.3052	0.1854	0.2137	0.3154	1.7601	2.0286	2.9941
8	10.5594	-0.4461	-2.2318	0.1859	0.2821	0.3106	1.7607	2.6714	2.9413
9	10.5700	-0.4527	-2.1229	0.1738	0.1791	0.2434	1.6446	1.6942	2.3029
10	10.5860	-0.1023	-2.1220	0.1805	0.3158	0.2163	1.7049	2.9827	2.0432
11	10.5627	-0.3896	-2.2193	0.1841	0.4139	0.3792	1.7427	3.9188	3.5901
12	10.5802	-0.9178	-2.0609	0.2169	0.7930	0.7598	2.0502	7.4949	7.1813

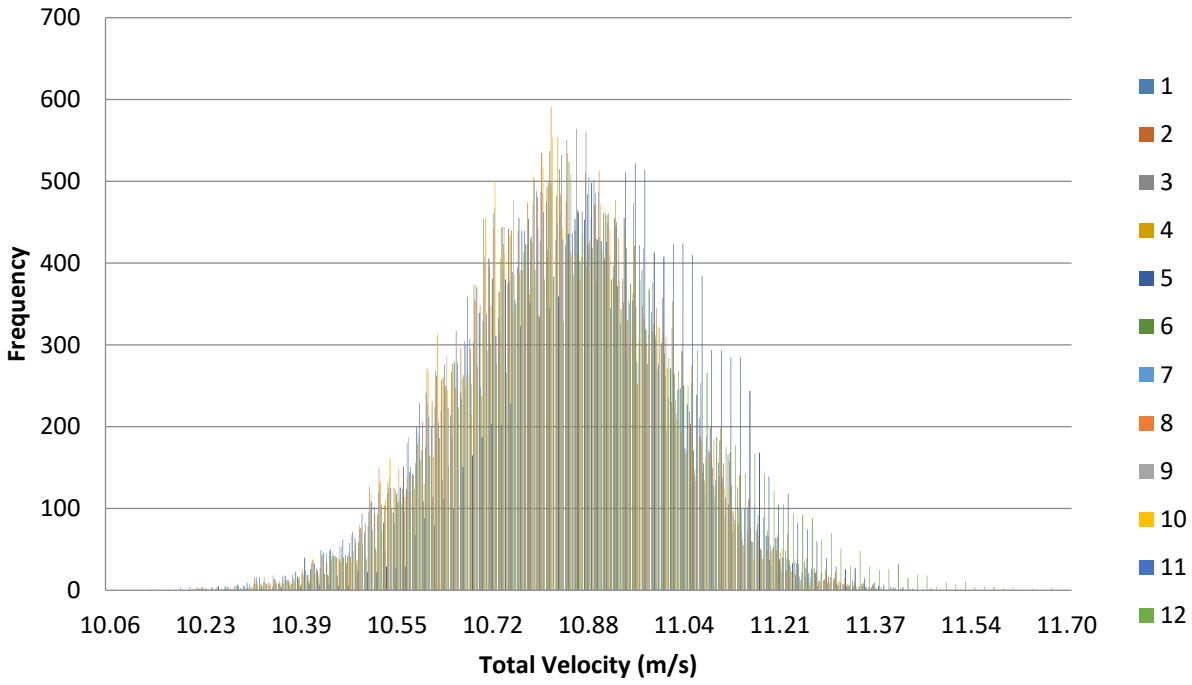


Figure 1. Velocity histogram for each interval (100 bins).

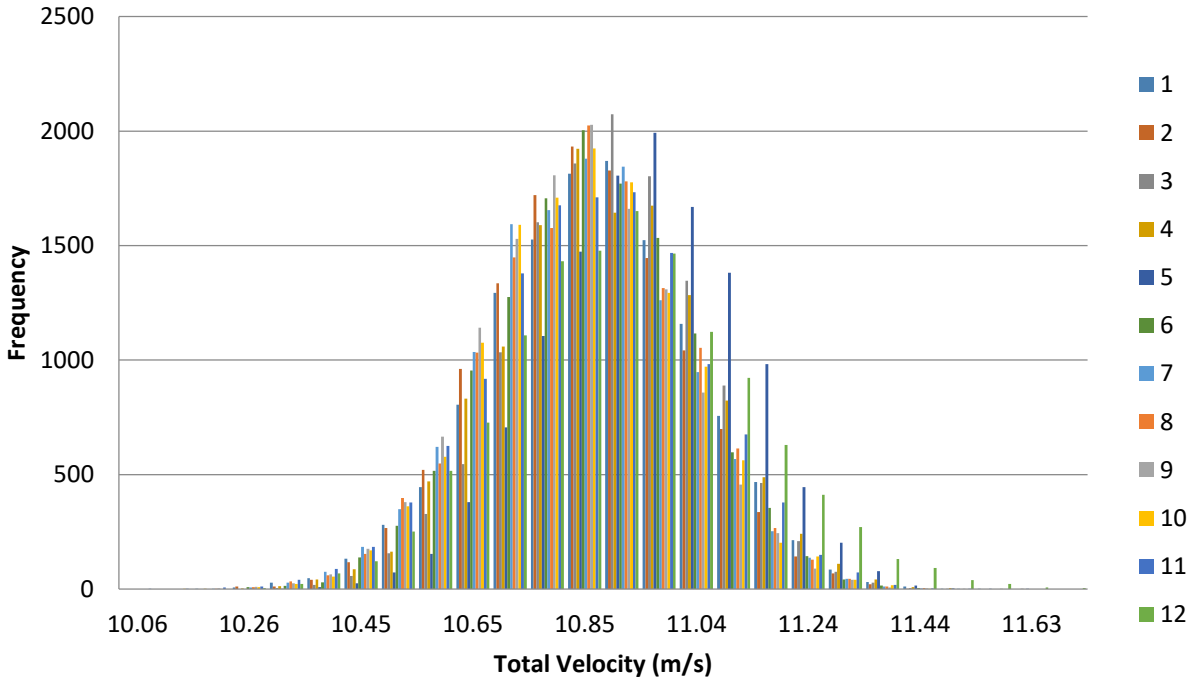
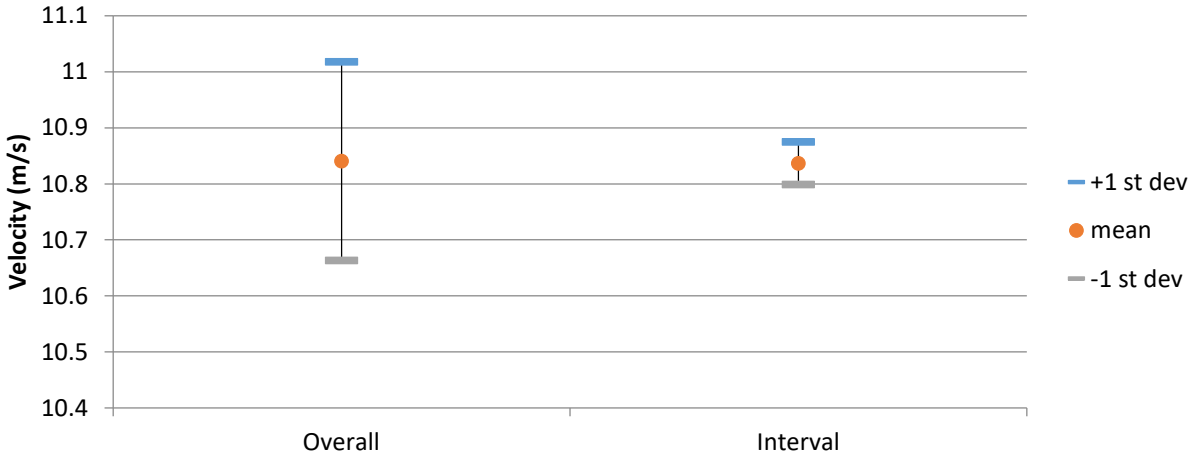
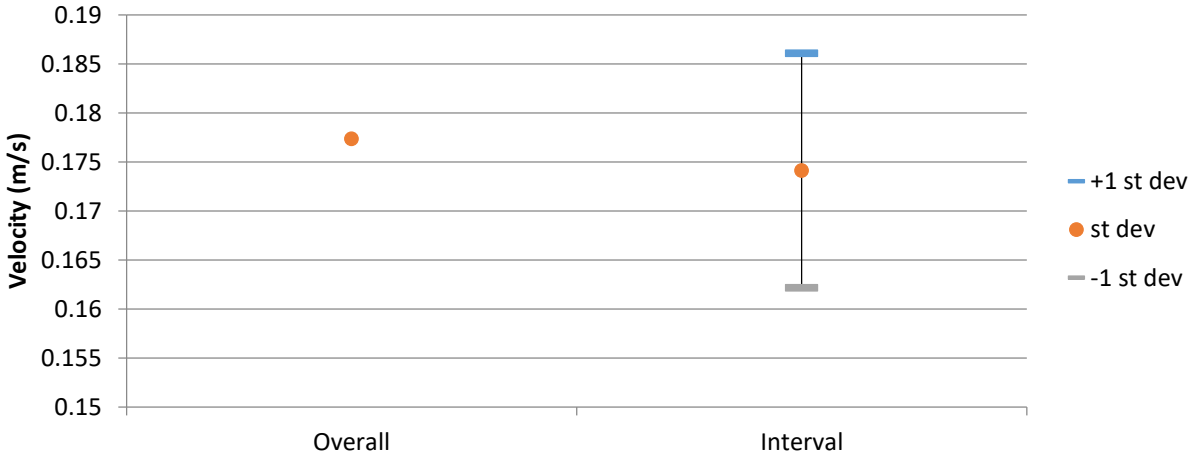


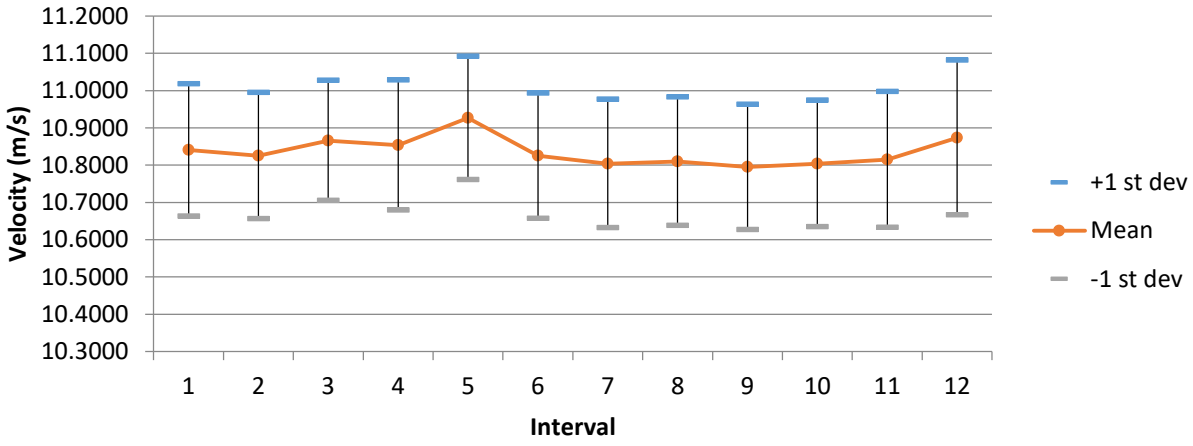
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 285
Blockage Condition: Existing Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 08:55:12.218

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.3051	5.9578	5.6431	0.0751
u	5.1700	5.8700	5.5243	0.0793
v	-0.5390	0.2490	-0.1475	0.1078
w	-1.5900	-0.7320	-1.1315	0.1141

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.9464	5.3734	5.6423	0.0755	1.3377
2	5.9115	5.3571	5.6318	0.0737	1.3080
3	5.9210	5.4271	5.6557	0.0678	1.1984
4	5.9325	5.3966	5.6718	0.0680	1.1992
5	5.9132	5.3563	5.6578	0.0745	1.3174
6	5.9393	5.3391	5.6373	0.0744	1.3204
7	5.9000	5.3693	5.6252	0.0749	1.3315
8	5.9578	5.3171	5.6386	0.0751	1.3324
9	5.9033	5.3636	5.6293	0.0746	1.3259
10	5.9533	5.3493	5.6492	0.0791	1.4009
11	5.8835	5.3565	5.6407	0.0722	1.2795
12	5.9301	5.3051	5.6379	0.0770	1.3662
		Average	5.6431	0.0739	1.3098
		St Dev	0.0134	0.0033	0.0572

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.5307	-0.1761	-1.0967	0.0790	0.0936	0.0658	1.4276	1.6930	1.1896
2	5.5072	-0.2416	-1.1433	0.0771	0.0797	0.1245	1.4009	1.4478	2.2605
3	5.5187	-0.0236	-1.2305	0.0714	0.0956	0.0830	1.2938	1.7328	1.5044
4	5.5304	-0.0344	-1.2522	0.0710	0.0831	0.0861	1.2832	1.5033	1.5573
5	5.5332	-0.1423	-1.1664	0.0777	0.0746	0.0874	1.4043	1.3485	1.5790
6	5.5184	-0.1927	-1.1290	0.0783	0.0972	0.0639	1.4182	1.7620	1.1587
7	5.5144	-0.1609	-1.0956	0.0788	0.0624	0.0591	1.4293	1.1315	1.0709
8	5.5210	-0.1217	-1.1342	0.0792	0.0828	0.0633	1.4347	1.4995	1.1461
9	5.5258	-0.1083	-1.0615	0.0781	0.0993	0.0732	1.4142	1.7968	1.3248
10	5.5558	-0.2295	-0.9873	0.0870	0.0793	0.1045	1.5651	1.4273	1.8810
11	5.5214	-0.2023	-1.1204	0.0814	0.0952	0.1601	1.4739	1.7237	2.9002
12	5.5144	-0.1371	-1.1603	0.0804	0.0730	0.0774	1.4578	1.3230	1.4035

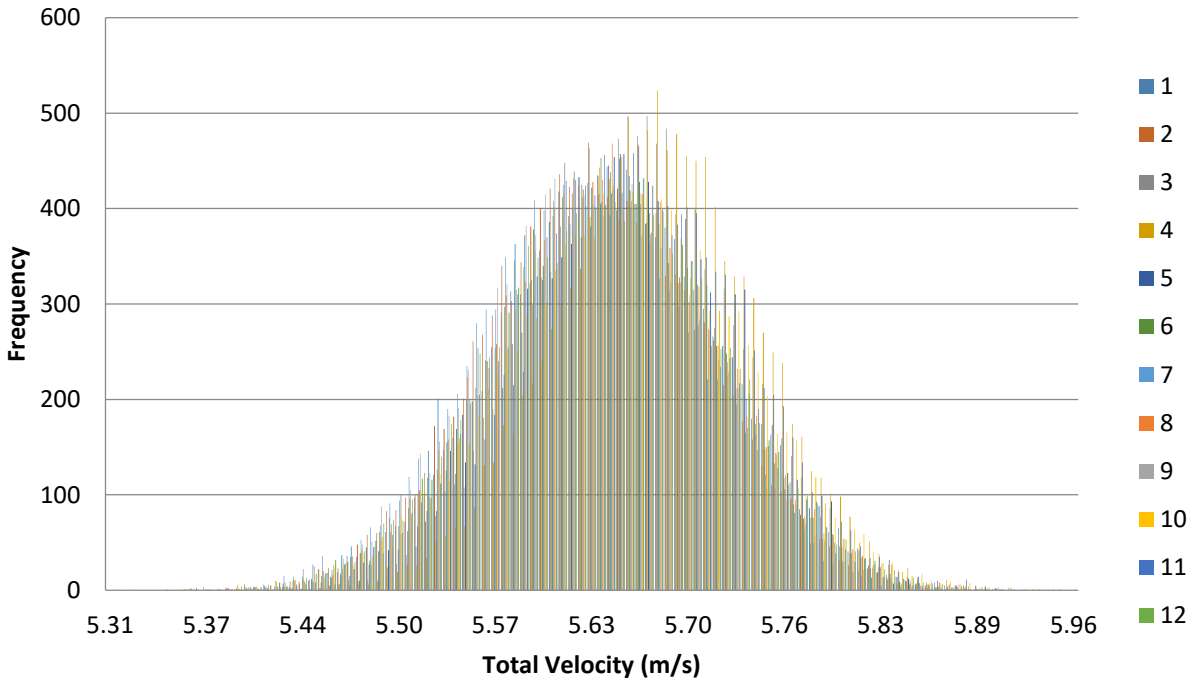


Figure 1. Velocity histogram for each interval (100 bins).

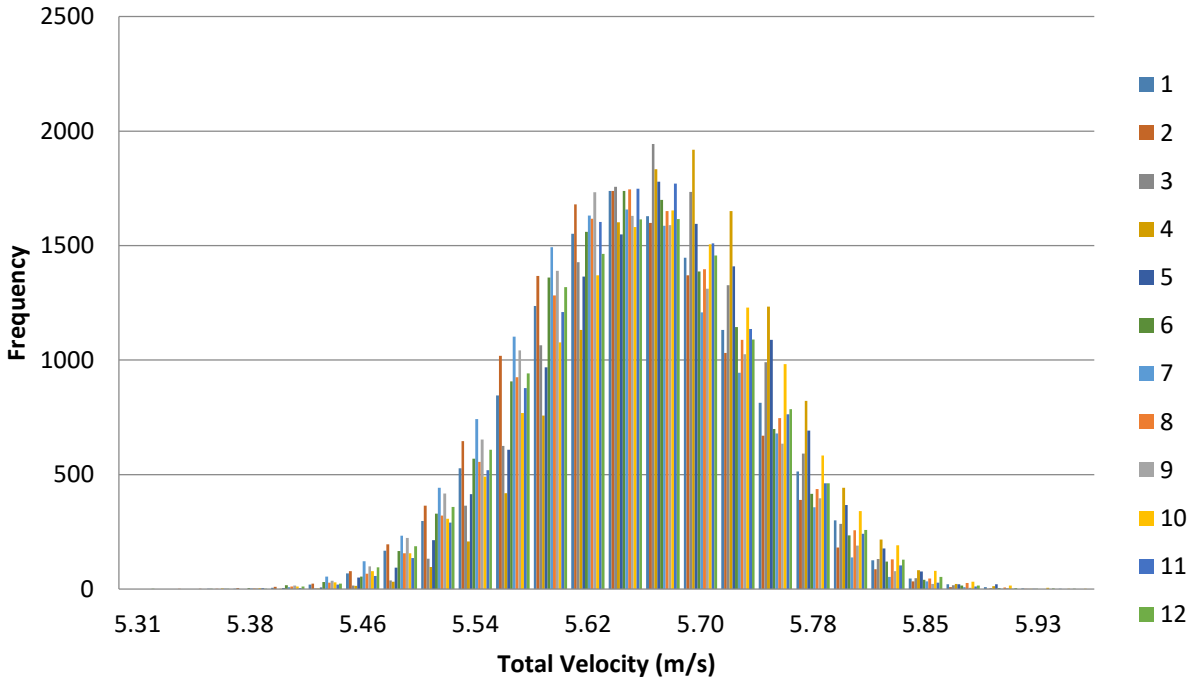
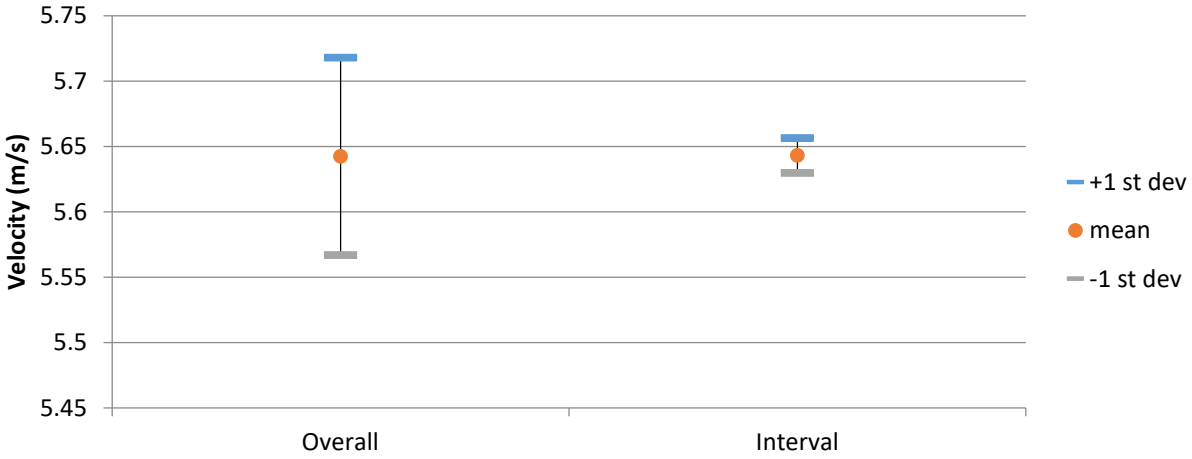
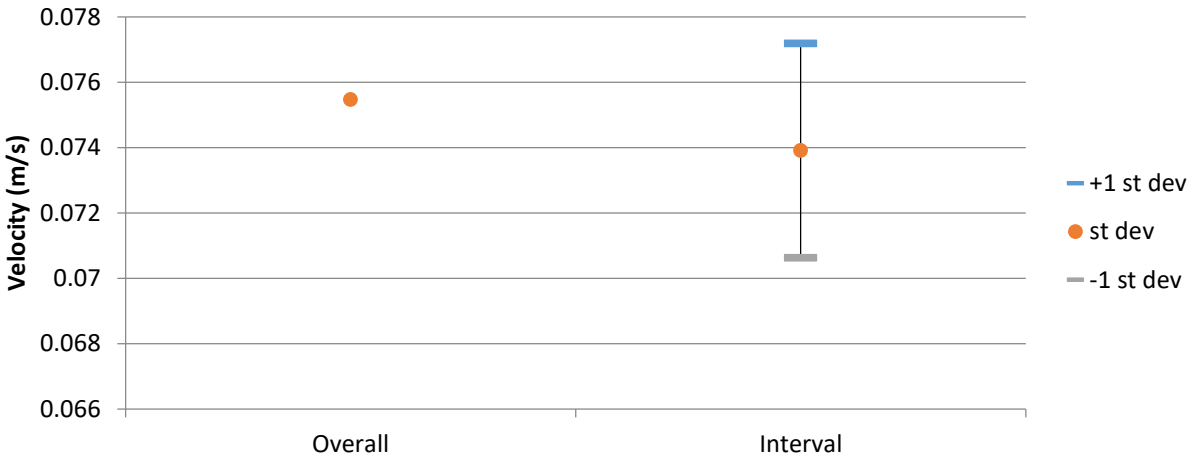


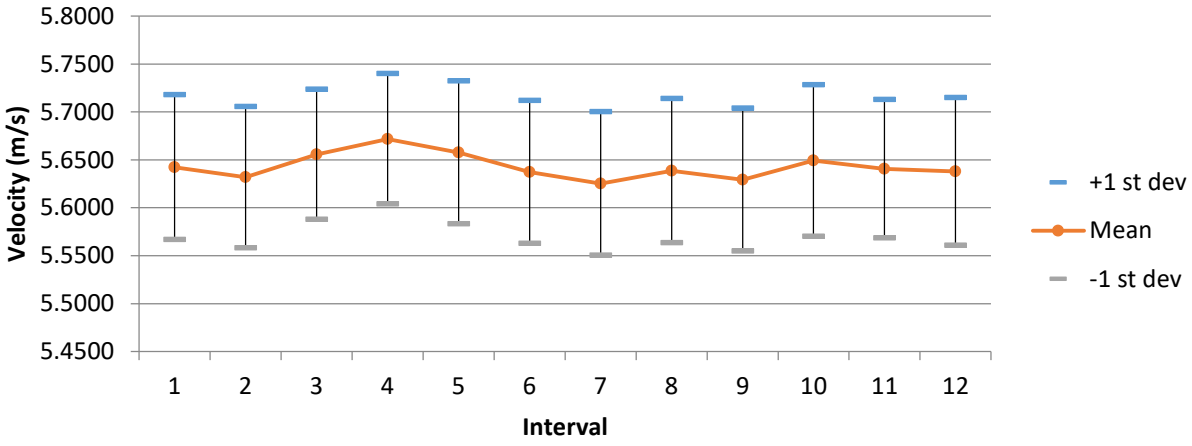
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 286
Blockage Condition: Existing buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 08:59:24.390

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.0072	11.8055	10.9126	0.1744
u	9.3100	11.4000	10.6253	0.1907
v	-2.7200	1.7500	-0.2164	0.4775
w	-4.5500	-0.6730	-2.3950	0.4139

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.5252	10.2439	10.8809	0.1654	1.5203
2	11.6054	10.1098	10.9018	0.1633	1.4981
3	11.5078	10.2267	10.9373	0.1635	1.4950
4	11.5804	10.1673	10.9370	0.1602	1.4651
5	11.7070	10.2075	10.9477	0.1821	1.6629
6	11.5162	10.3303	10.9451	0.1666	1.5222
7	11.5659	10.2322	10.9281	0.1723	1.5765
8	11.5133	10.2661	10.8836	0.1676	1.5402
9	11.5341	10.0072	10.8899	0.1766	1.6215
10	11.4979	10.2480	10.8577	0.1672	1.5398
11	11.6806	10.1723	10.9069	0.1708	1.5663
12	11.8055	10.2006	10.9357	0.2041	1.8666
		Average	10.9126	0.1716	1.5729
		St Dev	0.0298	0.0119	0.1031

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.6218	-0.2651	-2.3335	0.1723	0.1767	0.1483	1.6218	1.6638	1.3961
2	10.6008	-0.3993	-2.4916	0.1729	0.2176	0.2336	1.6306	2.0527	2.2033
3	10.5789	-0.5346	-2.6817	0.1719	0.4210	0.2300	1.6247	3.9801	2.1737
4	10.6228	-0.1251	-2.5879	0.1713	0.1907	0.1456	1.6126	1.7948	1.3710
5	10.5696	-0.6820	-2.7192	0.1783	0.2886	0.4413	1.6873	2.7301	4.1752
6	10.6499	-0.1739	-2.4835	0.1743	0.2720	0.3156	1.6362	2.5541	2.9634
7	10.6912	0.3912	-2.1889	0.1883	0.2542	0.3274	1.7615	2.3776	3.0622
8	10.6457	0.0353	-2.2456	0.1756	0.2213	0.1589	1.6493	2.0784	1.4925
9	10.6208	0.0795	-2.3265	0.2060	0.4171	0.4292	1.9395	3.9268	4.0415
10	10.6554	-0.1041	-2.0335	0.1770	0.3838	0.2365	1.6612	3.6016	2.2200
11	10.5485	-0.4658	-2.6537	0.2101	0.4899	0.4198	1.9917	4.6438	3.9793
12	10.6988	-0.3542	-1.9931	0.2197	0.7962	0.6226	2.0534	7.4418	5.8191

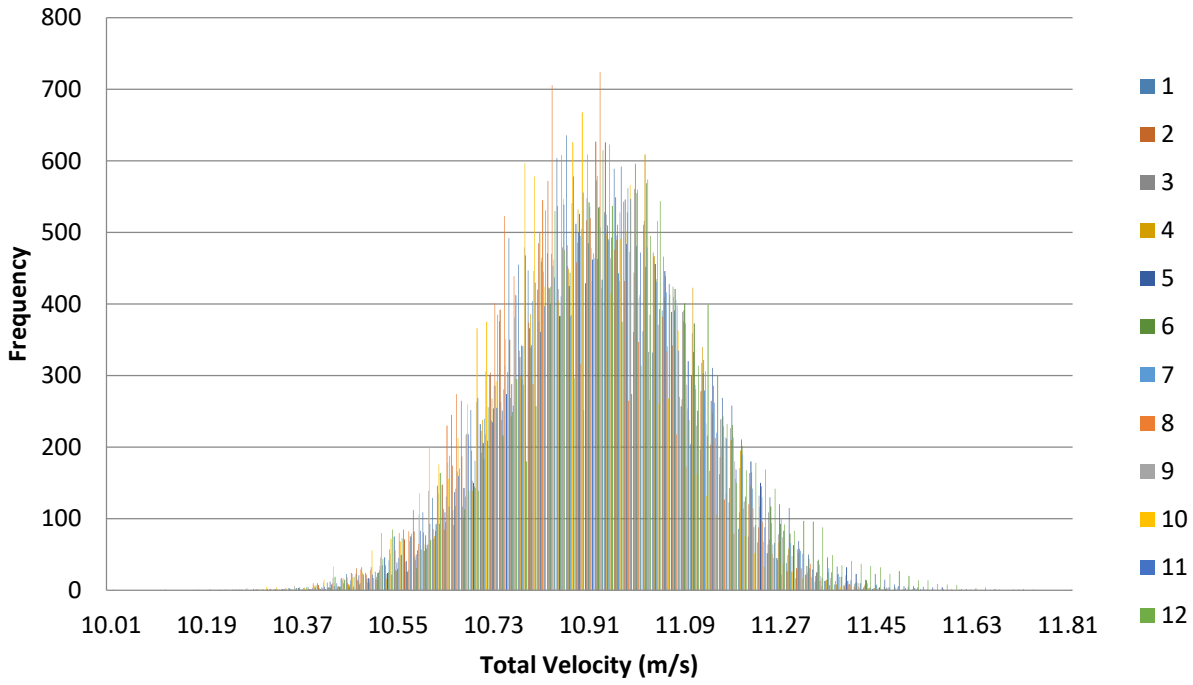


Figure 1. Velocity histogram for each interval (100 bins).

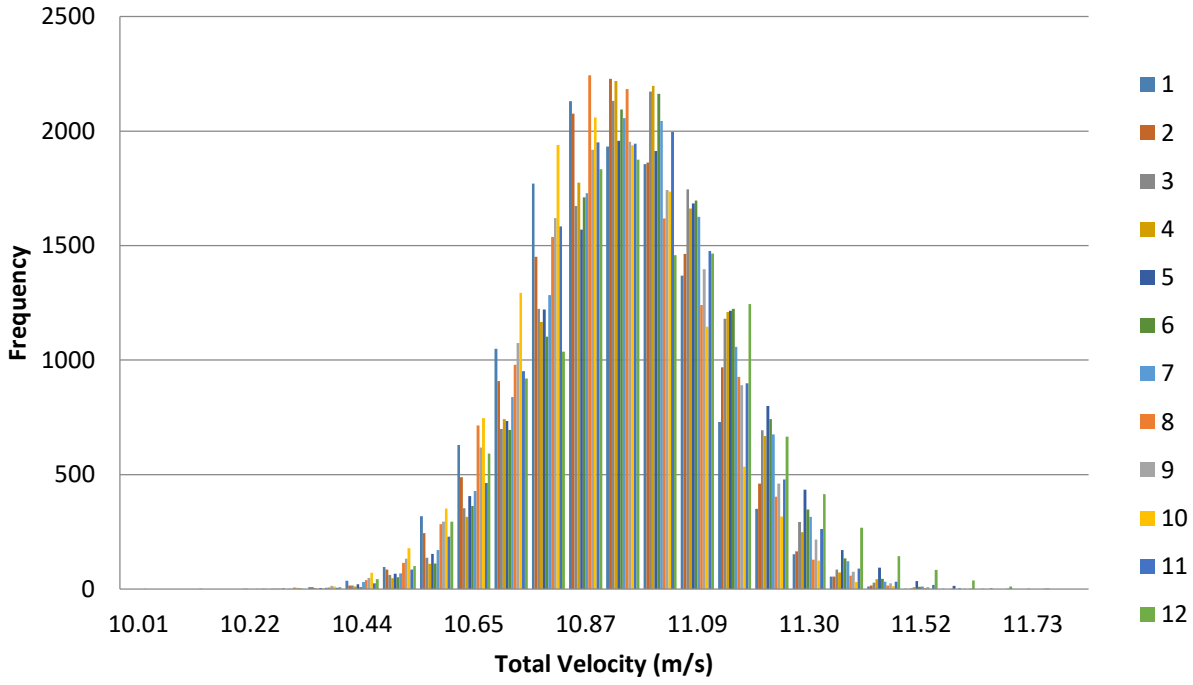
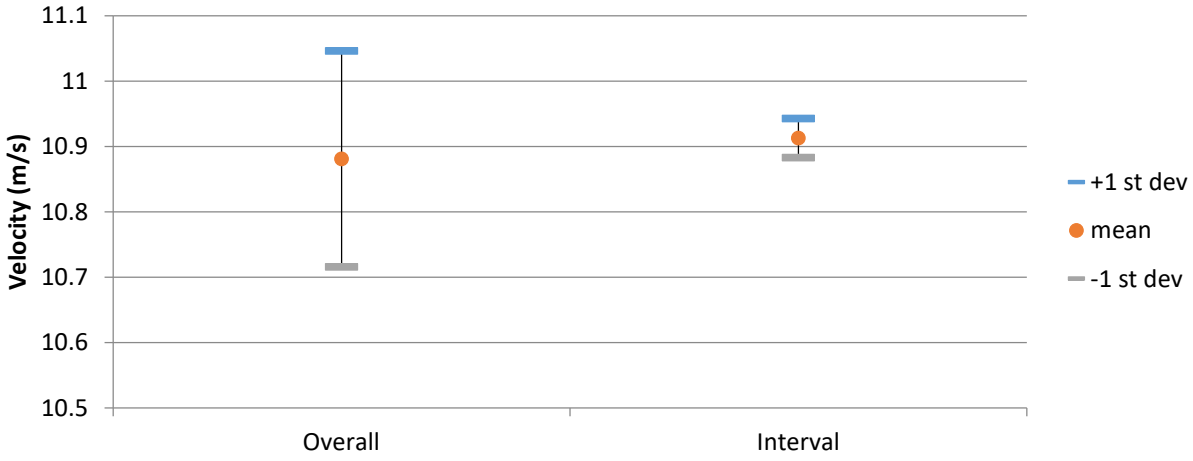
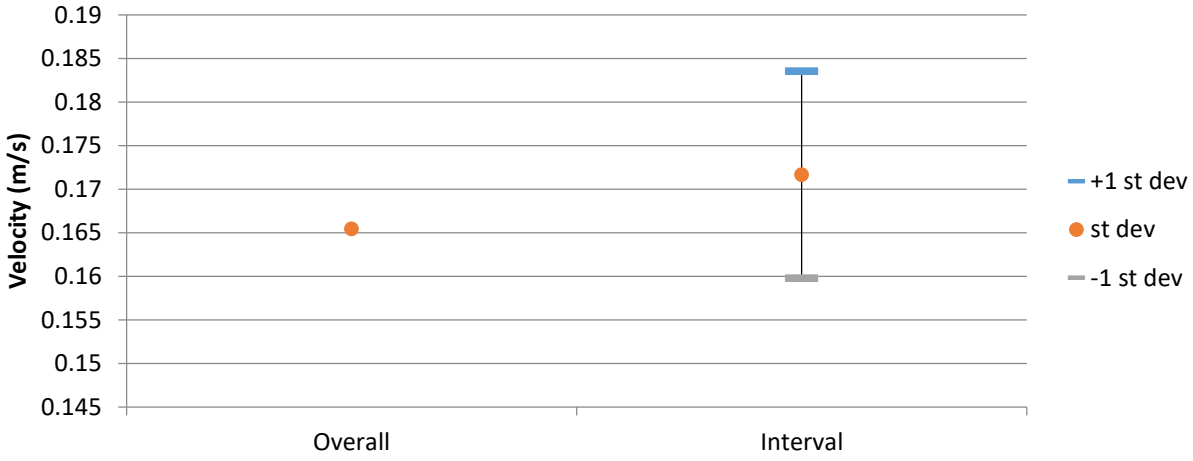


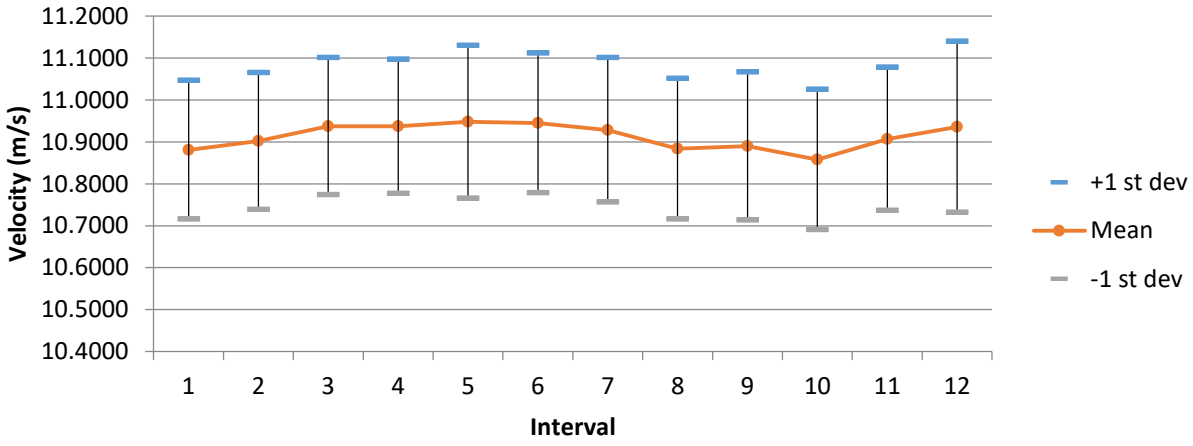
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 287
Blockage Condition: All Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 09:14:05.609

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.3446	5.9488	5.6546	0.0683
u	5.1600	5.8000	5.5012	0.0711
v	-0.4070	0.5440	-0.0577	0.1240
w	-1.8300	-0.8940	-1.2901	0.1680

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.9074	5.3868	5.6729	0.0638	1.1247
2	5.9348	5.4323	5.6728	0.0665	1.1728
3	5.9488	5.4045	5.6633	0.0660	1.1656
4	5.8801	5.3599	5.6330	0.0678	1.2034
5	5.8687	5.4160	5.6457	0.0634	1.1236
6	5.8587	5.3446	5.6224	0.0679	1.2068
7	5.8660	5.3745	5.6139	0.0676	1.2039
8	5.9017	5.3821	5.6364	0.0697	1.2366
9	5.9011	5.4004	5.6765	0.0598	1.0537
10	5.8996	5.4374	5.6760	0.0603	1.0630
11	5.8951	5.4672	5.6778	0.0583	1.0267
12	5.9050	5.3970	5.6645	0.0635	1.1203
		Average	5.6546	0.0646	1.1418
		St Dev	0.0231	0.0036	0.0650

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.4799	0.0008	-1.4623	0.0733	0.0787	0.0828	1.3376	1.4357	1.5118
2	5.5084	-0.0279	-1.3466	0.0664	0.0782	0.1343	1.2055	1.4195	2.4380
3	5.5166	-0.0425	-1.2680	0.0682	0.1287	0.1187	1.2371	2.3336	2.1521
4	5.5117	0.1389	-1.1432	0.0730	0.1392	0.0751	1.3237	2.5255	1.3628
5	5.5072	-0.0735	-1.2336	0.0683	0.0931	0.0901	1.2394	1.6900	1.6361
6	5.5076	-0.1730	-1.1135	0.0702	0.0625	0.0659	1.2739	1.1342	1.1971
7	5.5051	-0.1706	-1.0827	0.0703	0.0626	0.0686	1.2773	1.1376	1.2470
8	5.5047	-0.1383	-1.1947	0.0680	0.0687	0.1304	1.2355	1.2477	2.3696
9	5.5119	-0.0826	-1.3512	0.0632	0.0633	0.0698	1.1473	1.1482	1.2655
10	5.5125	-0.0556	-1.3482	0.0645	0.0641	0.0618	1.1700	1.1625	1.1209
11	5.4852	-0.0872	-1.4566	0.0728	0.0672	0.1219	1.3278	1.2255	2.2231
12	5.4635	0.0189	-1.4807	0.0735	0.1386	0.1544	1.3447	2.5364	2.8262

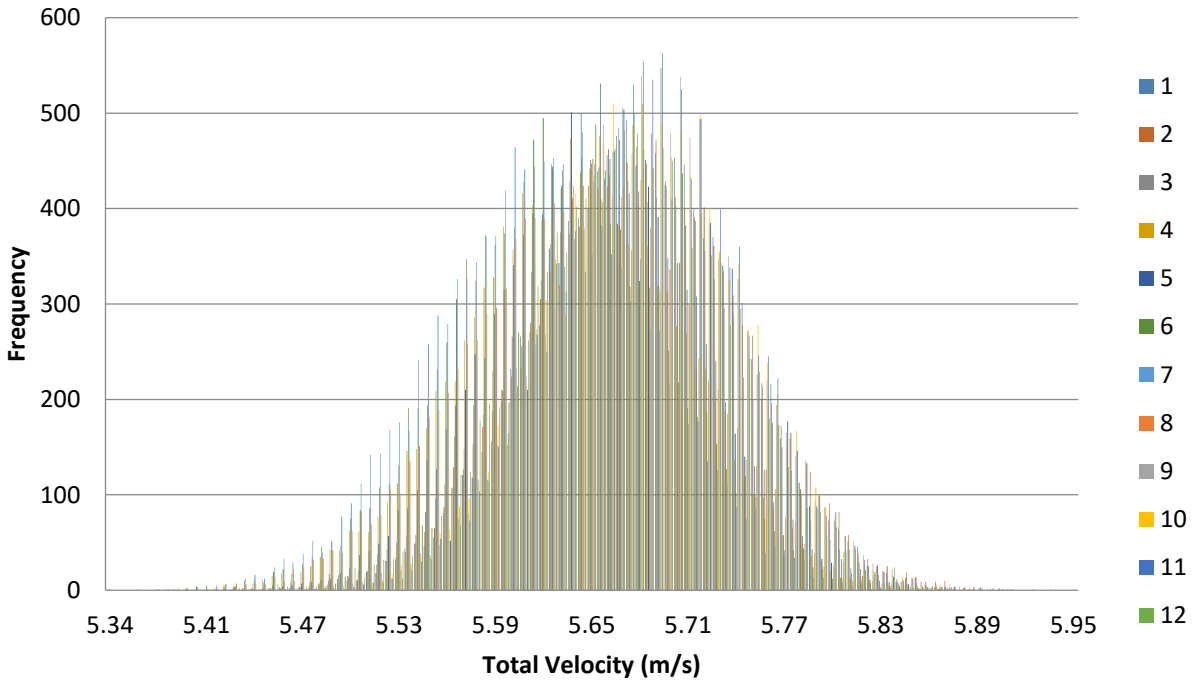


Figure 1. Velocity histogram for each interval (100 bins).

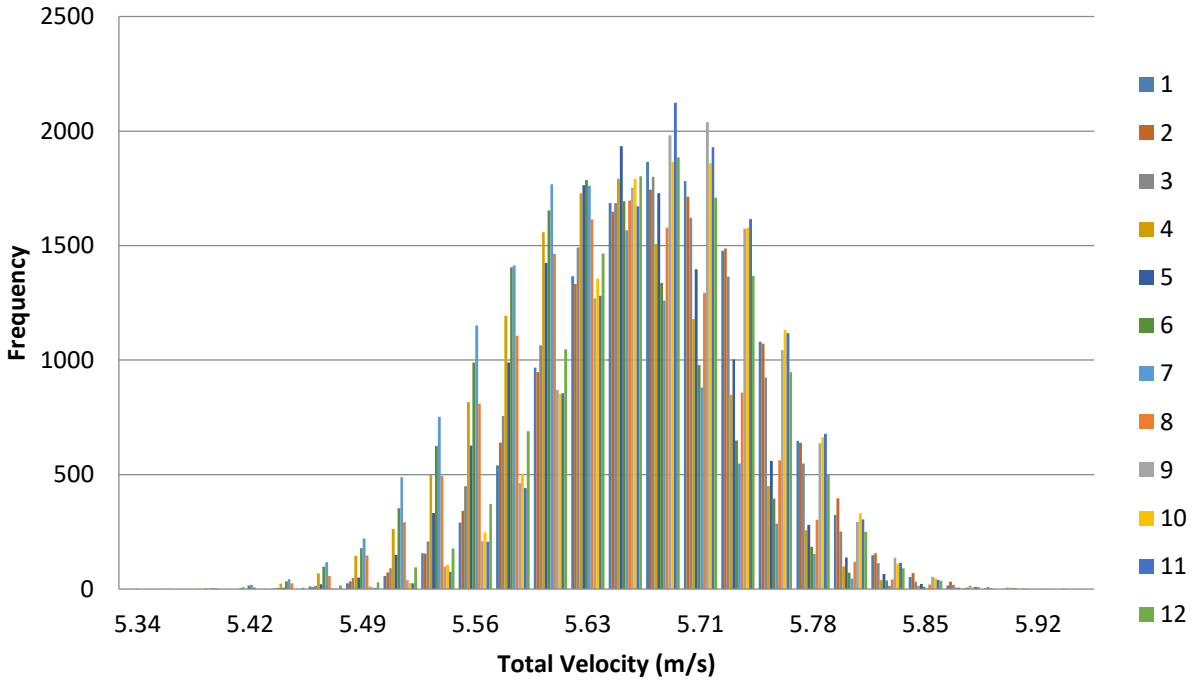
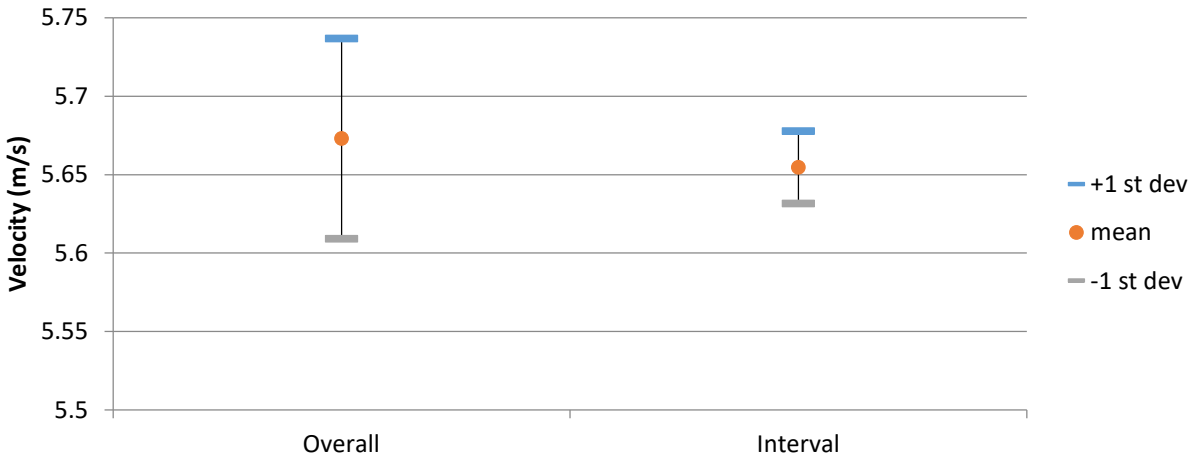
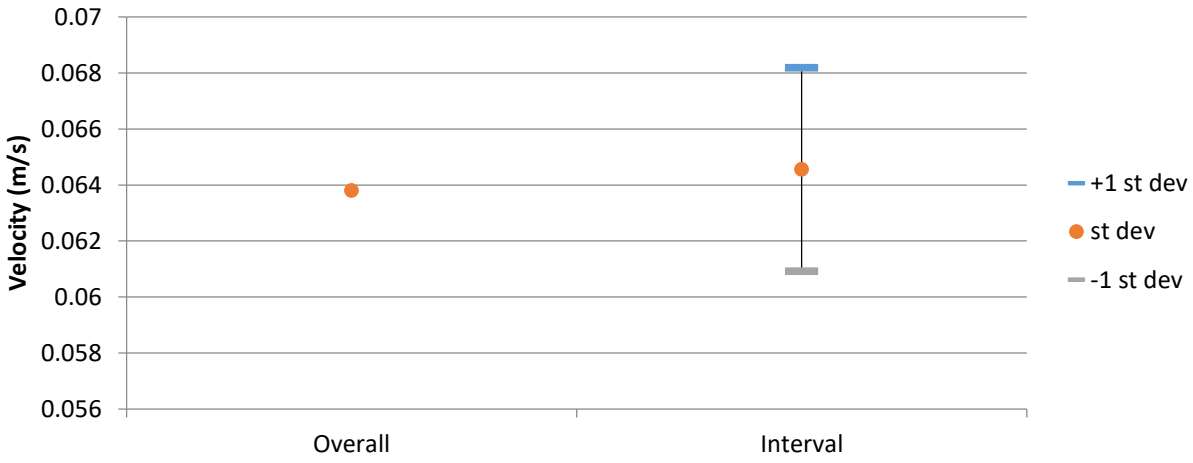


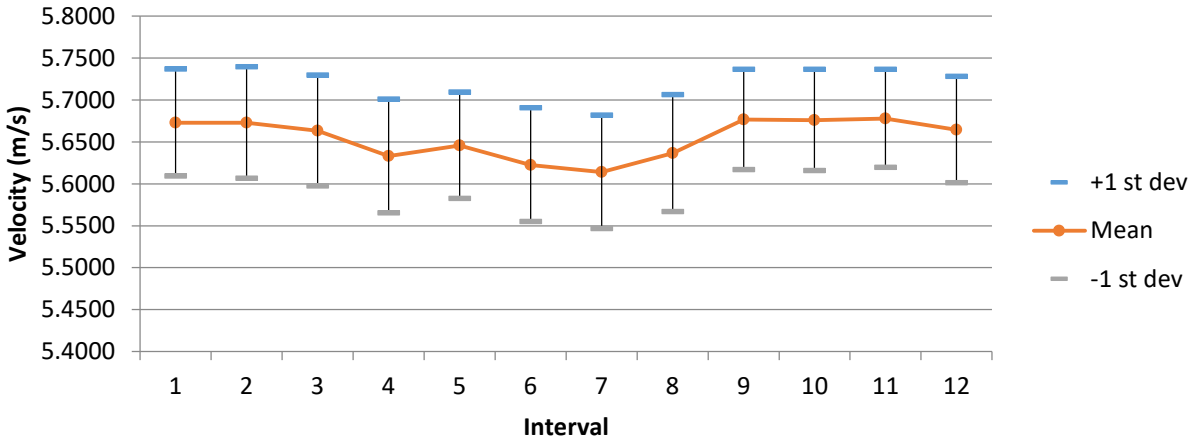
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 288
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 09:17:24.078

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.0837	11.5584	10.8436	0.1709
u	9.7100	11.3000	10.5407	0.1802
v	-1.1200	0.8980	-0.2498	0.2155
w	-3.7000	-1.1500	-2.4864	0.4287

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.3656	10.1971	10.8270	0.1630	1.5059
2	11.4781	10.1376	10.8108	0.1717	1.5885
3	11.3823	10.1977	10.8184	0.1690	1.5626
4	11.3950	10.1309	10.8031	0.1714	1.5864
5	11.5584	10.2653	10.9495	0.1598	1.4592
6	11.5218	10.3538	10.9407	0.1513	1.3830
7	11.4658	10.3269	10.8879	0.1573	1.4443
8	11.4067	10.2693	10.8421	0.1577	1.4548
9	11.4555	10.2274	10.8379	0.1575	1.4536
10	11.4652	10.2473	10.8064	0.1572	1.4547
11	11.3934	10.1557	10.8169	0.1657	1.5321
12	11.4443	10.0837	10.7829	0.1717	1.5921
		Average	10.8436	0.1628	1.5014
		St Dev	0.0540	0.0070	0.0667

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.5696	-0.2815	-2.3218	0.1706	0.1479	0.1161	1.6145	1.3993	1.0981
2	10.6047	-0.2078	-2.0717	0.1797	0.1462	0.2339	1.6942	1.3782	2.2052
3	10.6011	-0.1399	-2.1317	0.1761	0.1599	0.2492	1.6612	1.5084	2.3508
4	10.5758	-0.4117	-2.1457	0.1765	0.2047	0.2057	1.6686	1.9352	1.9448
5	10.5306	-0.1398	-2.9703	0.1819	0.1887	0.3339	1.7269	1.7922	3.1710
6	10.5211	-0.1969	-2.9795	0.1720	0.1687	0.2293	1.6348	1.6031	2.1792
7	10.4965	-0.3440	-2.8587	0.1754	0.2163	0.1612	1.6706	2.0609	1.5353
8	10.4541	-0.3336	-2.8370	0.1706	0.2392	0.2003	1.6321	2.2884	1.9161
9	10.4927	-0.3438	-2.6723	0.1673	0.2019	0.2443	1.5946	1.9241	2.3279
10	10.5280	-0.2828	-2.4088	0.1632	0.1622	0.1682	1.5505	1.5409	1.5979
11	10.5122	-0.1643	-2.5168	0.1736	0.1877	0.3155	1.6518	1.7856	3.0013
12	10.6017	-0.1526	-1.9228	0.1788	0.2777	0.2764	1.6865	2.6194	2.6074

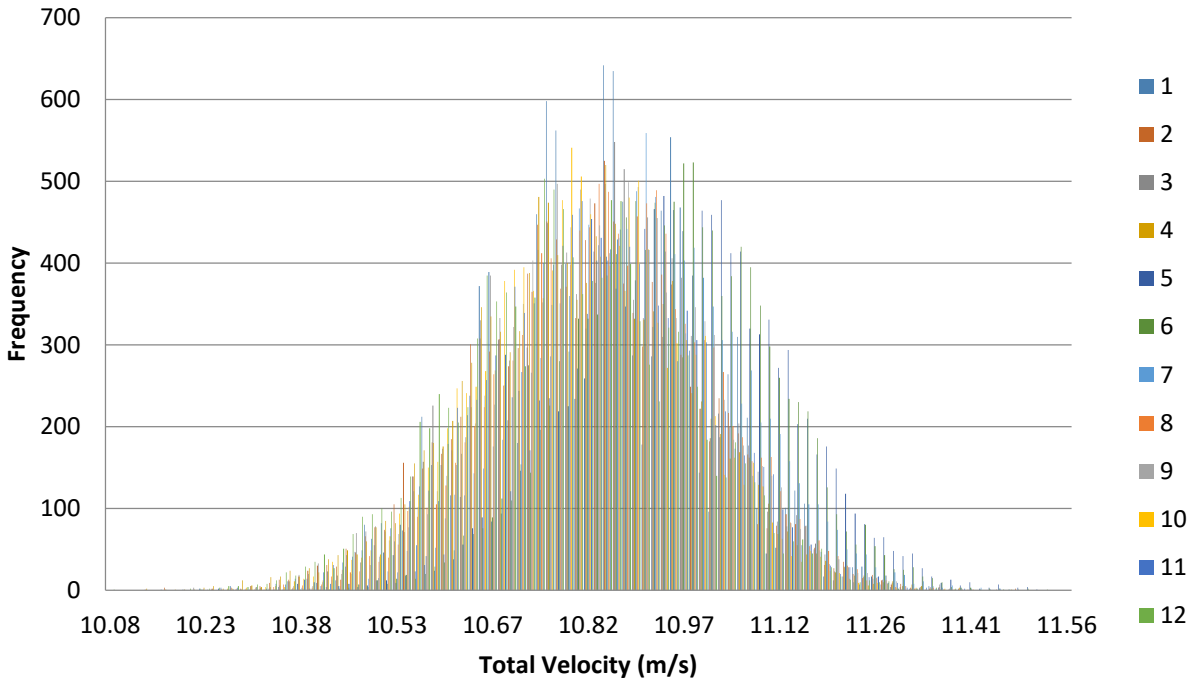


Figure 1. Velocity histogram for each interval (100 bins).

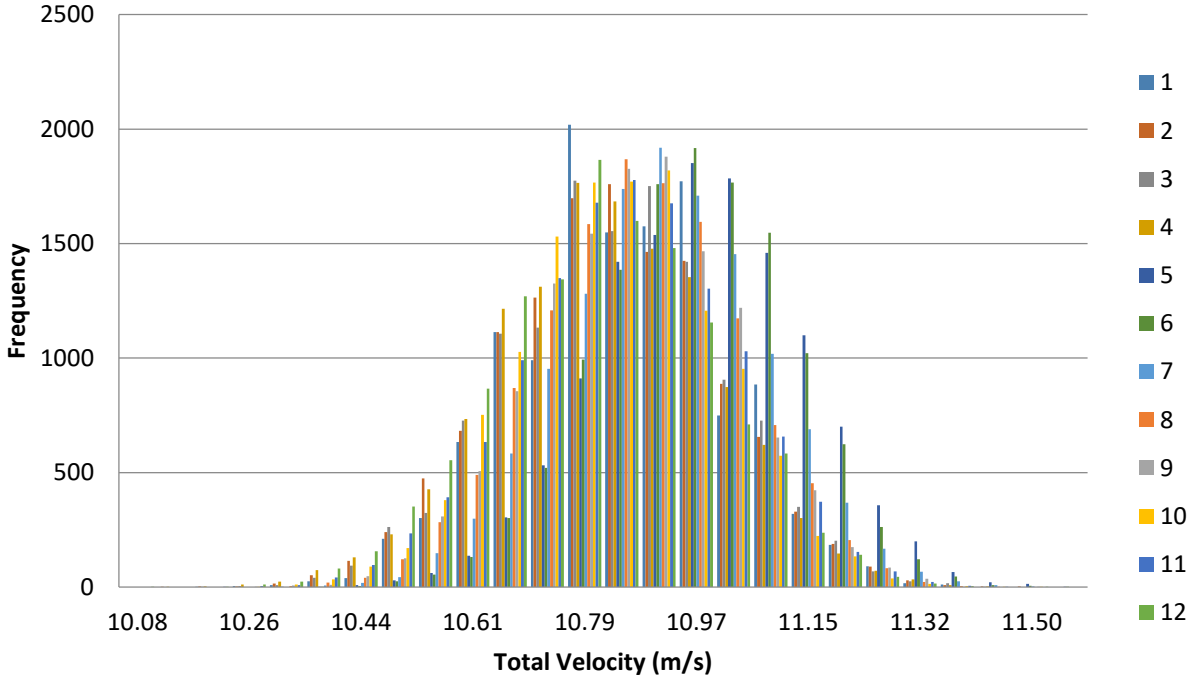
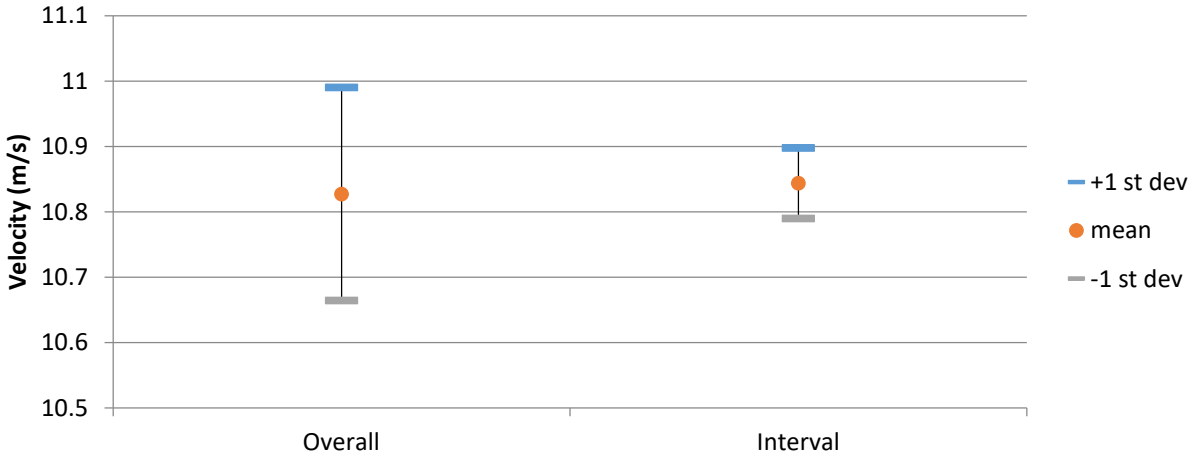
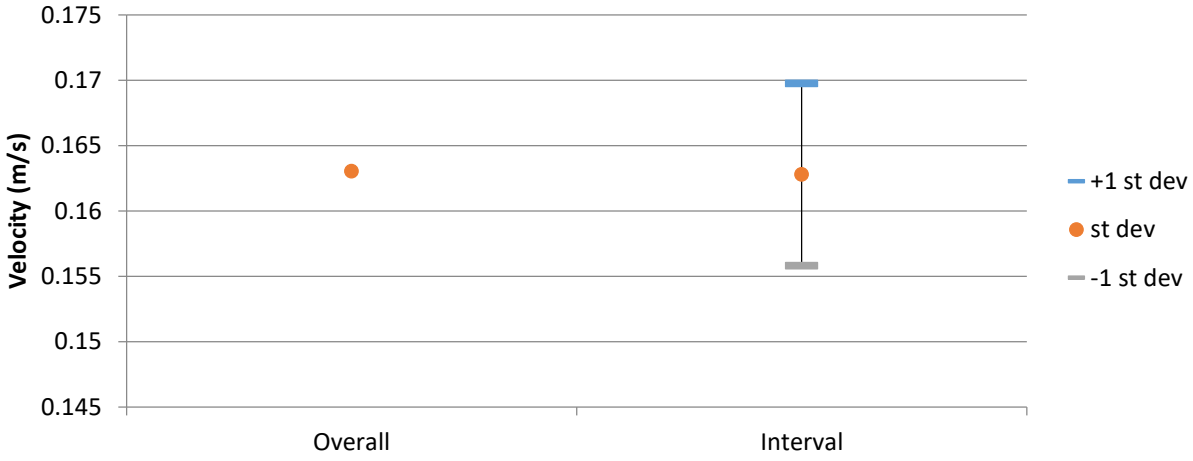


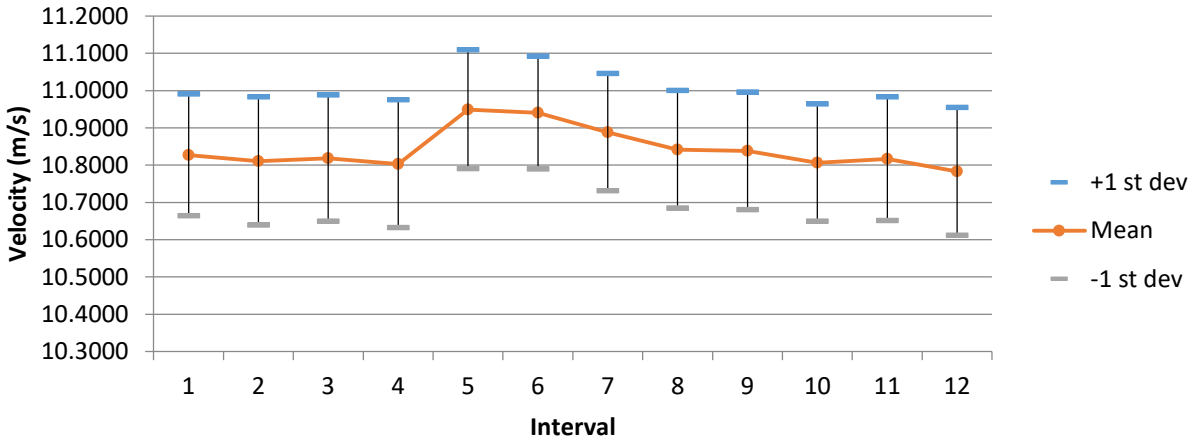
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 289
Blockage Condition: All Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 09:21:48.468

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.0145	7.6575	5.8217	0.2592
u	4.3700	6.9400	5.5453	0.3036
v	-4.1500	2.1400	0.1994	0.7405
w	-3.5100	1.3500	-1.4286	0.6984

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	6.3284	5.1162	5.6730	0.1169	2.0606
2	6.0844	5.3330	5.6907	0.1085	1.9069
3	6.9060	5.1502	5.9337	0.2306	3.8871
4	7.0361	5.4464	6.3398	0.2222	3.5046
5	7.6575	5.0321	6.0555	0.3442	5.6835
6	6.0956	5.0145	5.6818	0.0959	1.6881
7	6.1356	5.3026	5.7190	0.1023	1.7888
8	6.0588	5.2035	5.6641	0.1088	1.9201
9	6.2192	5.3206	5.6825	0.1061	1.8680
10	6.4048	5.1563	5.7953	0.1434	2.4746
11	6.3580	5.0533	5.7848	0.1351	2.3356
12	6.4094	5.2508	5.8402	0.1628	2.7873
		Average	5.8217	0.1564	
		St Dev	0.2026	0.0745	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.5365	0.4804	-0.9735	0.1143	0.3620	0.4707	2.0651	6.5377	8.5015
2	5.5873	0.6164	-0.7731	0.1183	0.3498	0.2531	2.1179	6.2616	4.5304
3	5.8364	0.7119	-0.4853	0.2418	0.2873	0.5615	4.1425	4.9228	9.6200
4	6.1088	-0.1430	-1.1322	0.2773	1.1320	0.5140	4.5388	18.5304	8.4142
5	5.6290	-1.0441	-1.5748	0.2956	1.0504	0.5841	5.2507	18.6601	10.3767
6	5.4446	0.1998	-1.4667	0.1416	0.4887	0.4456	2.6012	8.9760	8.1846
7	5.3228	0.0446	-1.9819	0.1839	0.5617	0.3258	3.4546	10.5530	6.1217
8	5.4577	0.5918	-1.3012	0.0871	0.4167	0.2869	1.5961	7.6347	5.2575
9	5.3445	0.5013	-1.7700	0.1947	0.3160	0.4651	3.6436	5.9126	8.7017
10	5.4386	0.0077	-1.8401	0.2009	0.5031	0.5900	3.6938	9.2498	10.8482
11	5.2725	0.3337	-2.2775	0.2387	0.3859	0.4232	4.5267	7.3199	8.0265
12	5.5650	0.0924	-1.5665	0.2342	0.3416	0.7288	4.2092	6.1382	13.0964

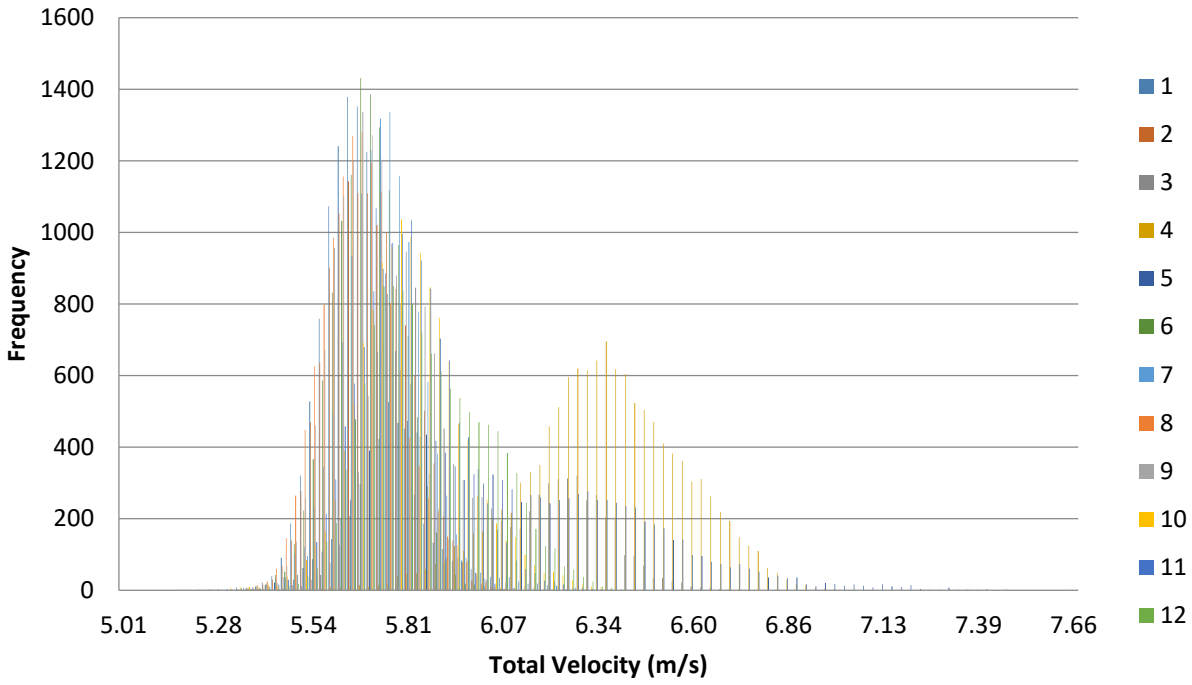


Figure 1. Velocity histogram for each interval (100 bins).

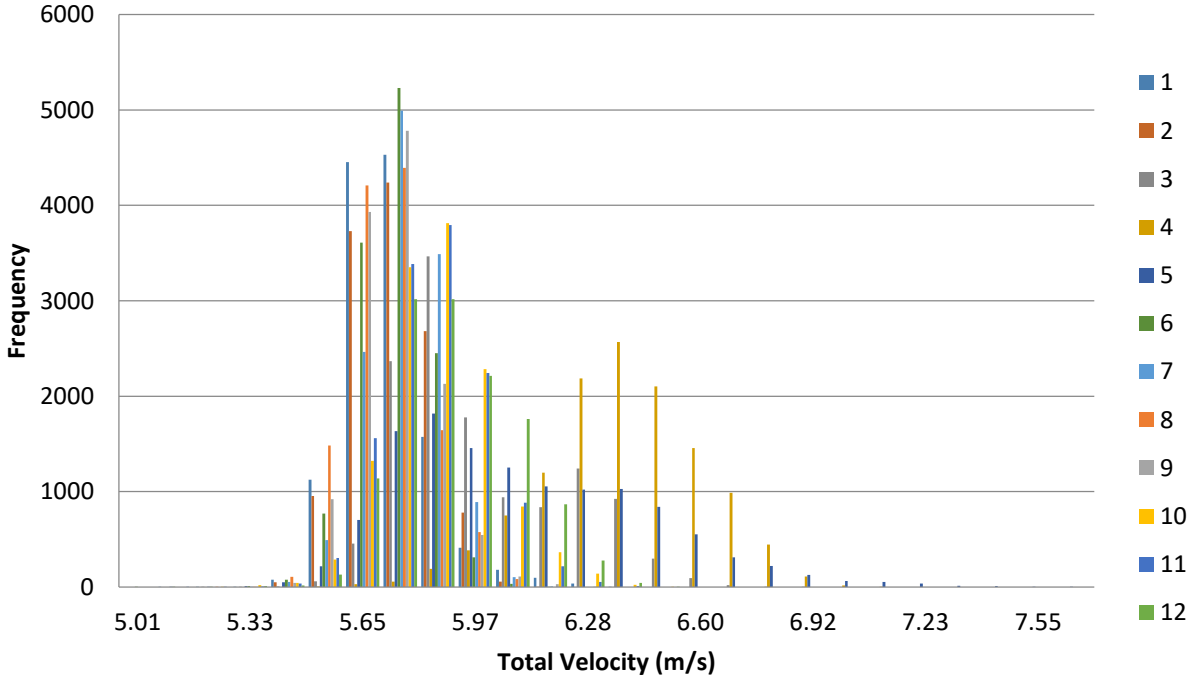
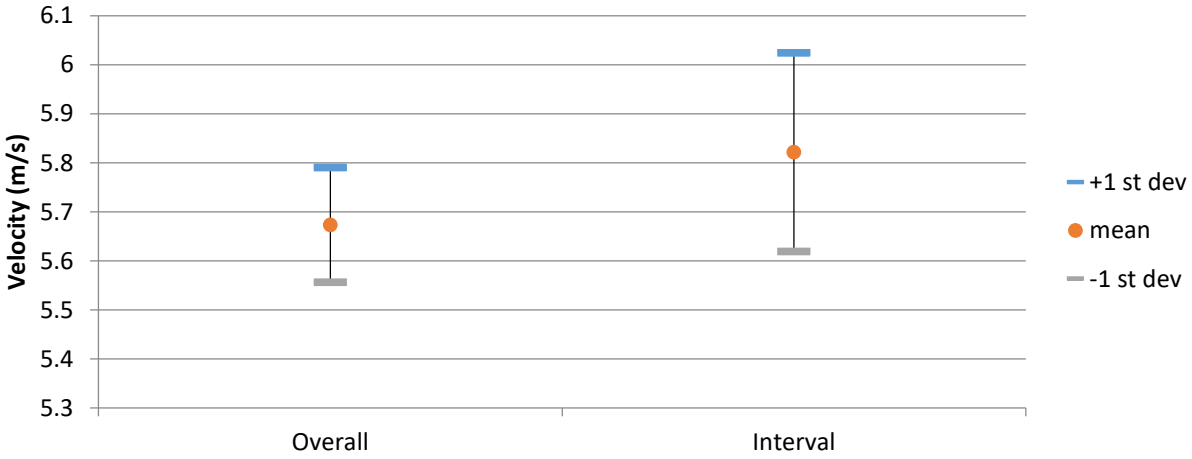
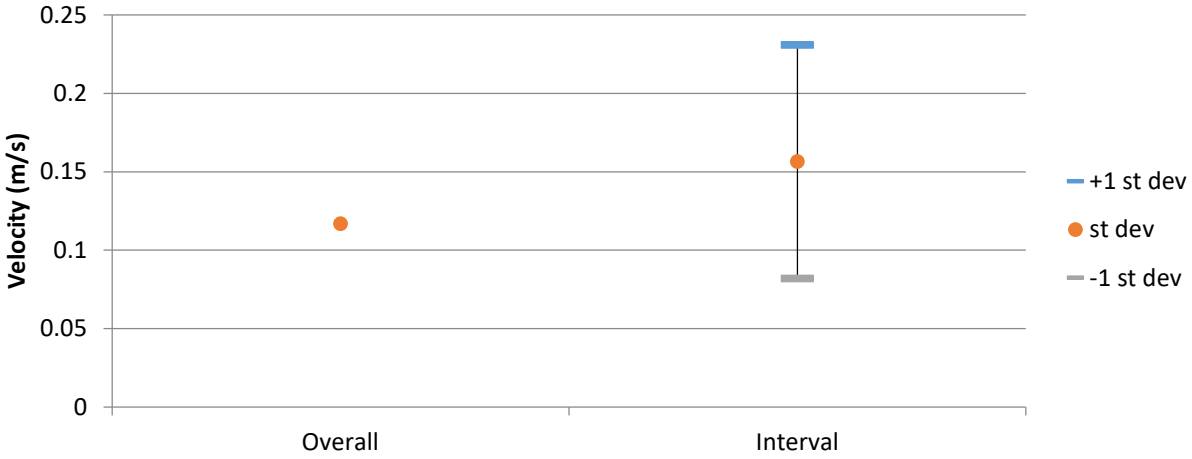


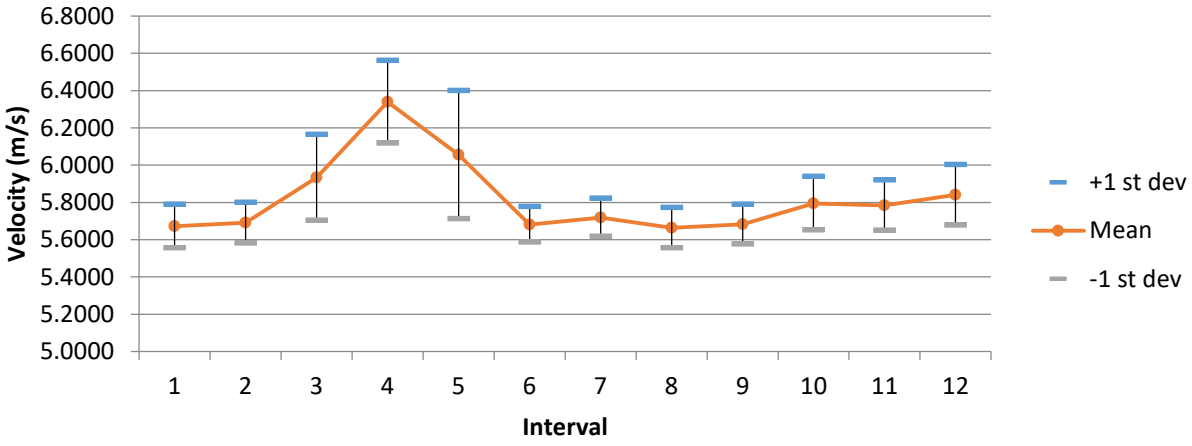
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 290
Blockage Condition: All Buildings
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 09:25:39.921

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.0091	11.9700	10.9589	0.2047
u	9.1000	11.7000	10.6486	0.2880
v	-2.3600	3.2900	0.1720	0.6193
w	-5.4000	0.0807	-2.3252	0.9189

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.6616	10.3476	11.0537	0.1809	1.6366
2	11.8022	10.3204	11.0544	0.1860	1.6822
3	11.6552	10.1947	10.9207	0.1812	1.6589
4	11.6176	10.2810	10.9393	0.1771	1.6192
5	11.4868	10.2785	10.8946	0.1682	1.5437
6	11.7484	10.1399	10.9210	0.1875	1.7170
7	11.7706	10.1861	10.9370	0.2110	1.9289
8	11.7522	10.1935	10.9556	0.1901	1.7353
9	11.9699	10.2246	11.0462	0.2277	2.0618
10	11.9700	10.0808	10.9287	0.2284	2.0897
11	11.6405	10.0091	10.8937	0.2116	1.9427
12	11.7438	10.0400	10.9624	0.1989	1.8147
		Average	10.9589	0.1957	
		St Dev	0.0594	0.0198	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.6946	-0.3304	-2.7150	0.1917	0.3506	0.4505	1.7920	3.2782	4.2126
2	10.8472	0.4327	-1.9885	0.1821	0.4816	0.4091	1.6789	4.4399	3.7714
3	10.8372	0.7100	-1.0081	0.1917	0.3942	0.3699	1.7686	3.6371	3.4128
4	10.7453	0.7871	-1.8363	0.2039	0.2786	0.3573	1.8979	2.5927	3.3249
5	10.6644	0.3978	-2.1374	0.1824	0.4425	0.1891	1.7100	4.1491	1.7732
6	10.7220	0.2529	-1.9217	0.1983	0.3013	0.6747	1.8493	2.8098	6.2926
7	10.6285	-0.0546	-2.4127	0.2138	0.3544	0.8385	2.0112	3.3345	7.8892
8	10.7300	-0.7079	-1.8270	0.2162	0.5423	0.8642	2.0153	5.0536	8.0536
9	10.6394	-0.0786	-2.8343	0.2516	0.5324	0.6976	2.3648	5.0040	6.5565
10	10.4268	0.1964	-3.0212	0.3508	0.7270	0.9758	3.3644	6.9720	9.3590
11	10.2796	0.1355	-3.5095	0.3385	0.5126	0.5794	3.2932	4.9861	5.6362
12	10.5688	0.3219	-2.6897	0.3001	0.5245	0.9004	2.8393	4.9624	8.5193

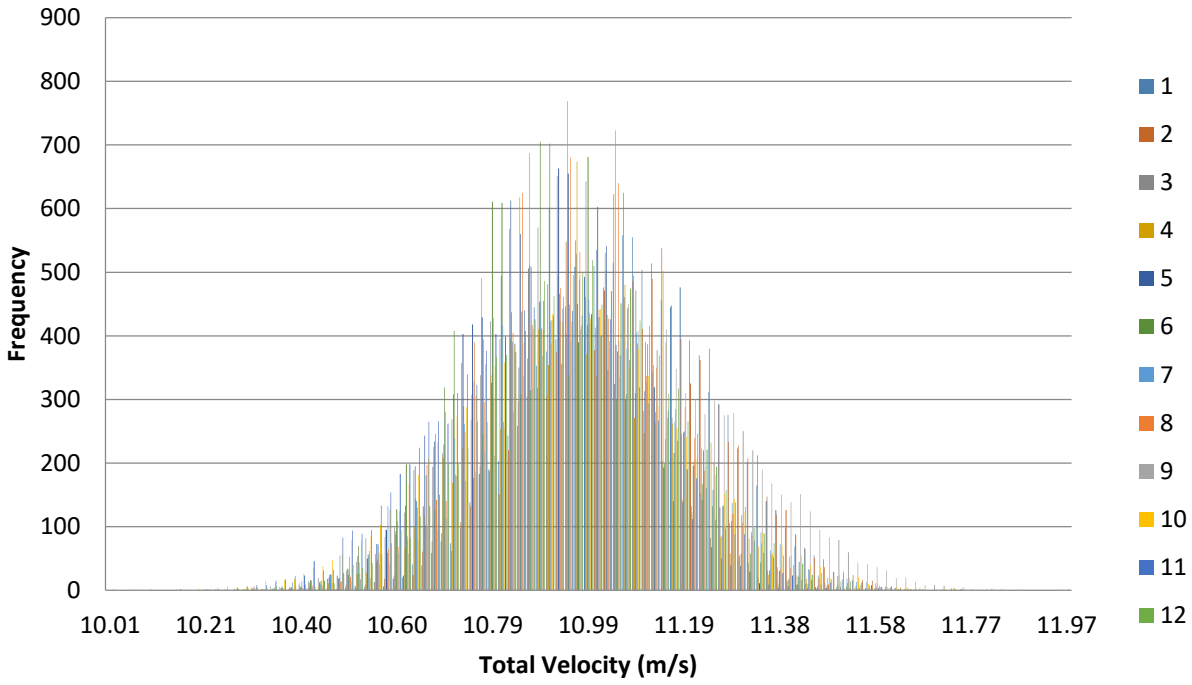


Figure 1. Velocity histogram for each interval (100 bins).

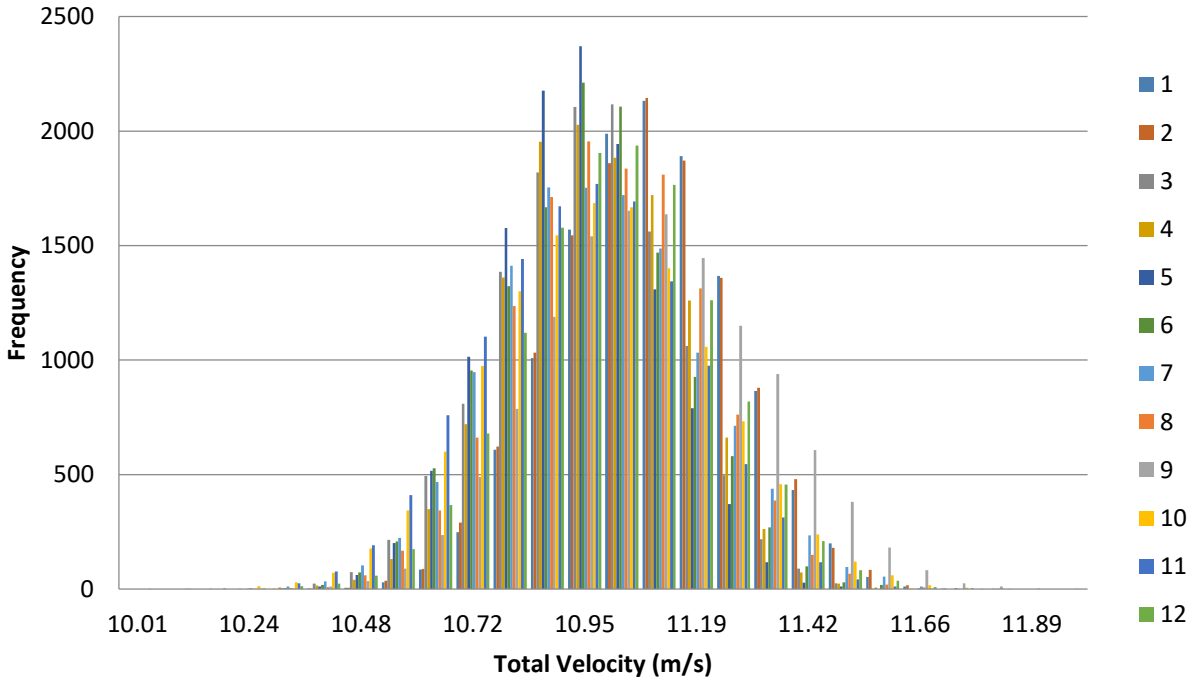
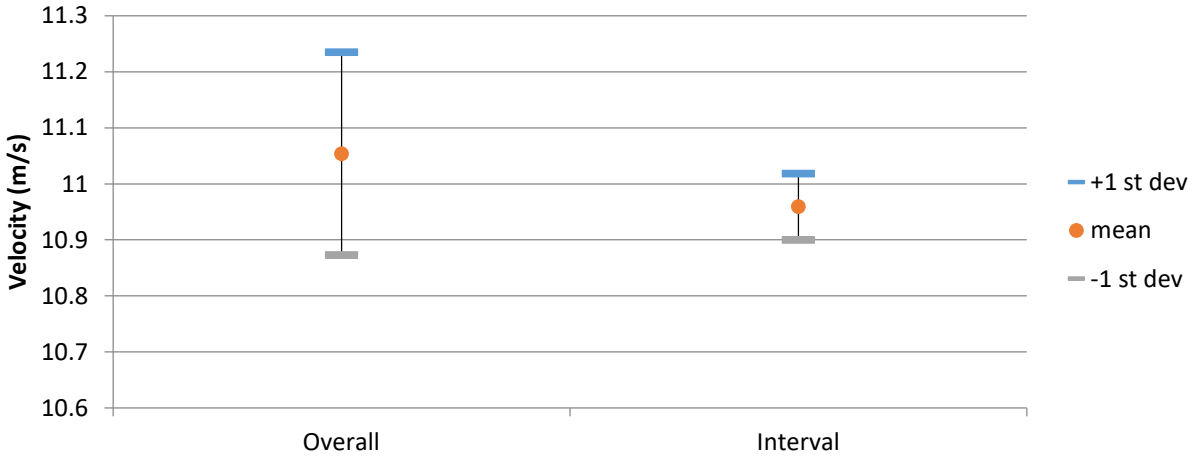
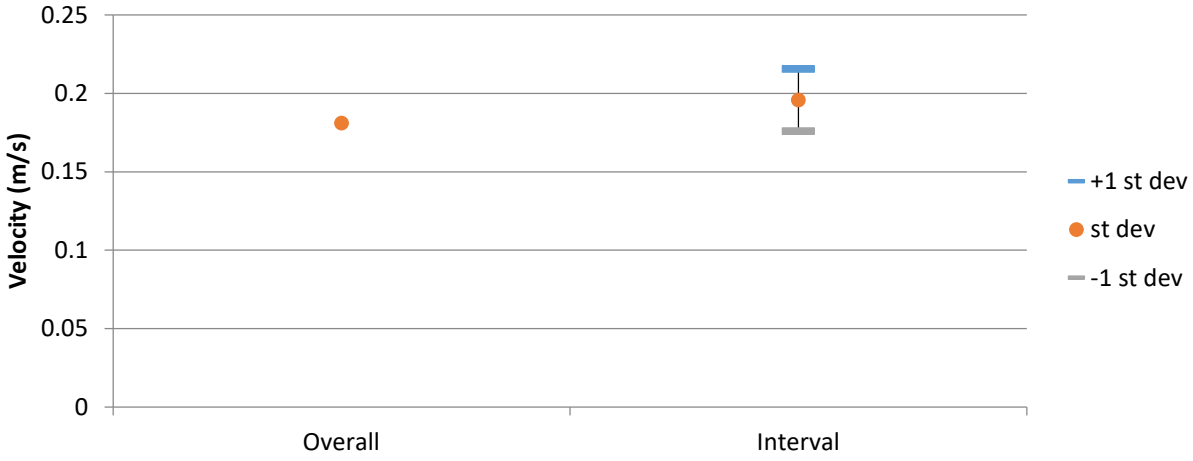


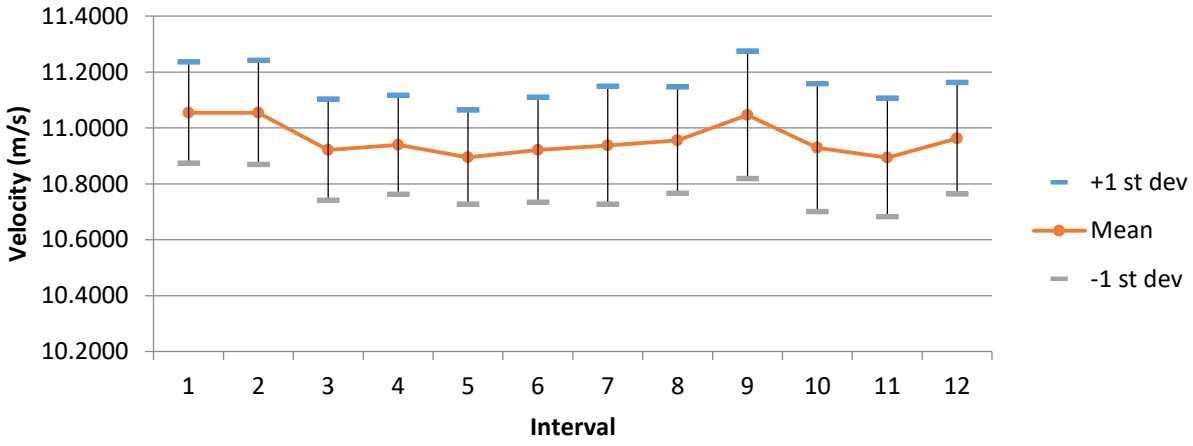
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 291
Blockage Condition: Existing Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 09:36:03.765

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.3175	6.1761	5.6771	0.0883
u	4.5300	5.8700	5.4623	0.1457
v	-1.0500	1.2600	-0.0460	0.2800
w	-3.3300	-0.3250	-1.4479	0.4509

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	6.0851	5.4346	5.7451	0.0908	1.5802
2	6.1070	5.3786	5.7047	0.0967	1.6954
3	6.1761	5.3175	5.7394	0.1047	1.8248
4	6.0076	5.3536	5.7029	0.0846	1.4843
5	6.0074	5.3799	5.6903	0.0825	1.4500
6	5.8926	5.3953	5.6535	0.0712	1.2589
7	5.9061	5.3448	5.6491	0.0761	1.3463
8	5.9439	5.4090	5.6748	0.0705	1.2425
9	5.8928	5.3767	5.6430	0.0671	1.1899
10	5.8925	5.3495	5.6375	0.0690	1.2233
11	5.9085	5.3970	5.6397	0.0692	1.2276
12	5.9091	5.3611	5.6457	0.0678	1.2011
		Average	5.6772	0.0792	
		St Dev	0.0388	0.0127	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.4199	0.2555	-1.8487	0.1441	0.2976	0.2160	2.6592	5.4913	3.9852
2	5.3007	0.3374	-2.0547	0.1361	0.2478	0.2010	2.5671	4.6752	3.7912
3	5.3886	0.0167	-1.8776	0.2279	0.3674	0.4485	4.2291	6.8187	8.3223
4	5.3480	-0.1810	-1.9263	0.1512	0.2411	0.3235	2.8280	4.5084	6.0487
5	5.3839	-0.2701	-1.7776	0.1305	0.2612	0.2873	2.4243	4.8522	5.3368
6	5.5325	-0.1163	-1.1331	0.0780	0.1335	0.1921	1.4096	2.4129	3.4721
7	5.5465	0.0284	-1.0338	0.0846	0.1715	0.2194	1.5247	3.0919	3.9561
8	5.5287	-0.0065	-1.2435	0.0733	0.2148	0.2076	1.3257	3.8859	3.7540
9	5.5368	-0.0444	-1.0821	0.0698	0.0760	0.0935	1.2602	1.3725	1.6879
10	5.5218	-0.2472	-1.0980	0.0724	0.1316	0.0841	1.3109	2.3835	1.5223
11	5.5238	-0.1943	-1.1128	0.0727	0.1000	0.0908	1.3163	1.8098	1.6437
12	5.5159	-0.1306	-1.1866	0.0696	0.1048	0.1125	1.2621	1.8993	2.0389

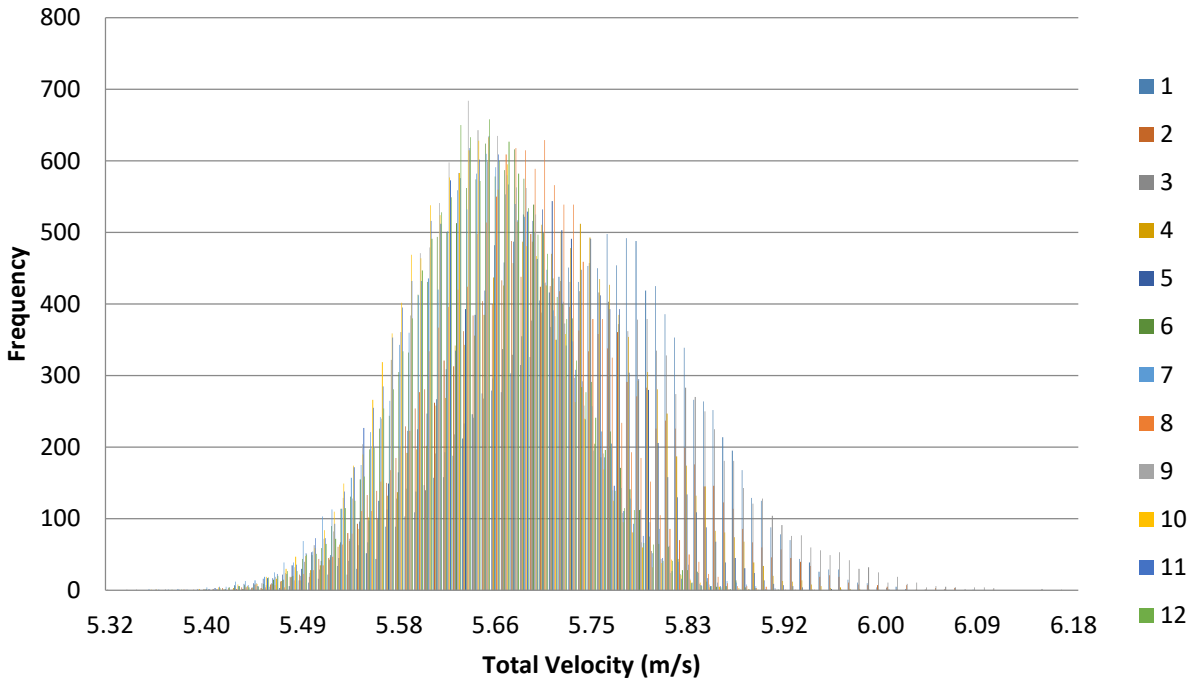


Figure 1. Velocity histogram for each interval (100 bins).

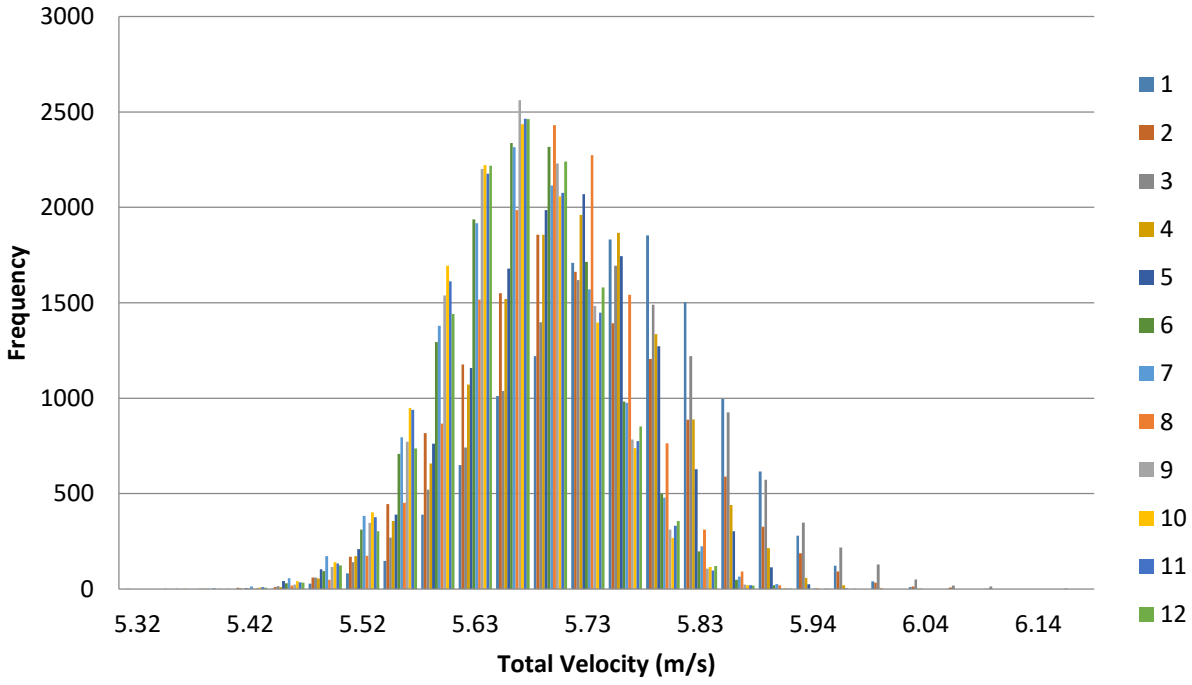
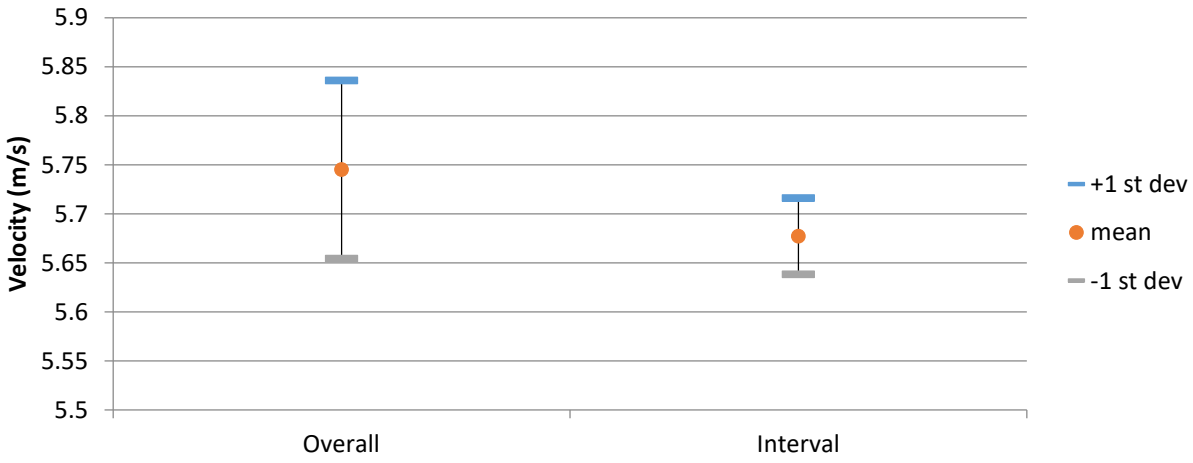
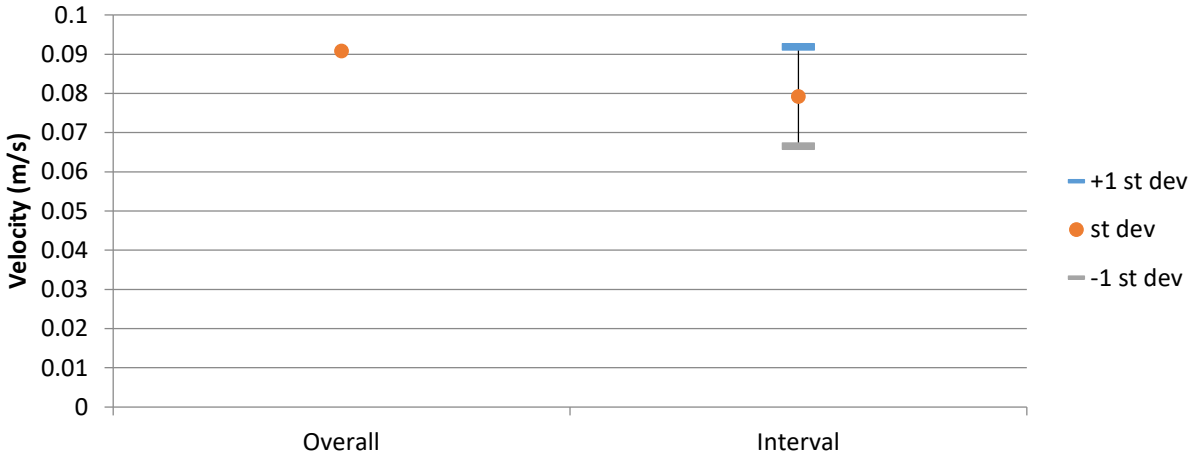


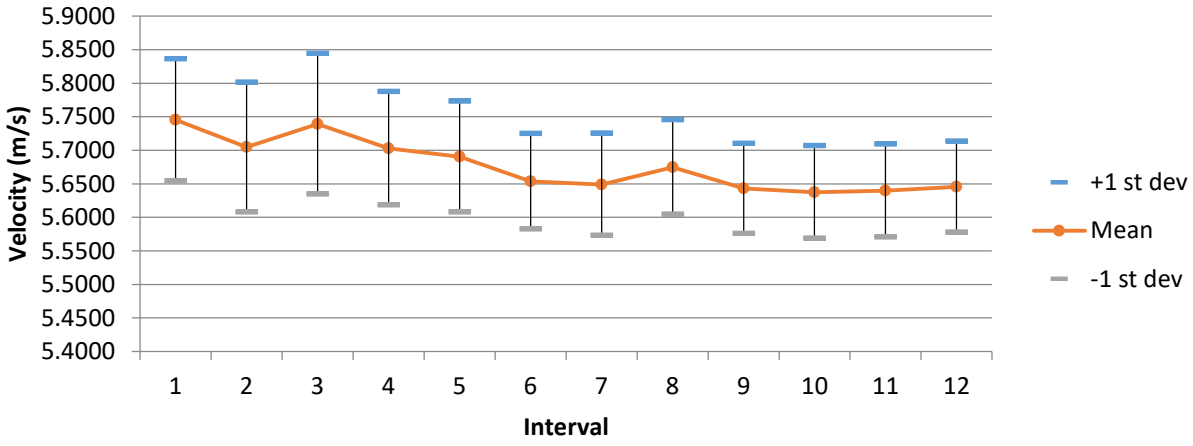
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 292
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 09:39:28.250

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.1039	11.5815	10.8540	0.1677
u	9.7600	11.3000	10.5899	0.1776
v	-1.2500	0.9280	-0.1775	0.3055
w	-3.9500	-1.3700	-2.3293	0.3320

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.5815	10.2978	10.8869	0.1621	1.4885
2	11.4976	10.2447	10.8909	0.1614	1.4816
3	11.4643	10.2528	10.8852	0.1646	1.5121
4	11.4712	10.1119	10.8839	0.1636	1.5027
5	11.3963	10.1941	10.8197	0.1692	1.5641
6	11.5050	10.1746	10.8334	0.1634	1.5084
7	11.4885	10.2705	10.8844	0.1539	1.4140
8	11.4287	10.2822	10.8911	0.1534	1.4084
9	11.3940	10.1966	10.8186	0.1679	1.5521
10	11.4734	10.1656	10.8204	0.1718	1.5874
11	11.4602	10.1039	10.8171	0.1738	1.6064
12	11.4007	10.1955	10.8169	0.1656	1.5313
		Average	10.8540	0.1642	
		St Dev	0.0348	0.0062	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.6235	0.1753	-2.3603	0.1727	0.1926	0.1525	1.6256	1.8128	1.4351
2	10.6175	0.1423	-2.3966	0.1715	0.2315	0.2425	1.6154	2.1799	2.2839
3	10.6227	0.1340	-2.3497	0.1727	0.2509	0.2051	1.6255	2.3618	1.9307
4	10.5195	-0.3877	-2.7342	0.1759	0.1922	0.3618	1.6719	1.8271	3.4391
5	10.5856	-0.3165	-2.2016	0.1751	0.1769	0.1762	1.6543	1.6715	1.6647
6	10.5794	-0.3347	-2.2918	0.1694	0.1690	0.2092	1.6016	1.5973	1.9772
7	10.5097	-0.4140	-2.7823	0.1704	0.2004	0.2421	1.6214	1.9066	2.3036
8	10.5664	-0.3065	-2.6086	0.1645	0.1634	0.1955	1.5566	1.5468	1.8506
9	10.6207	-0.4578	-1.9941	0.1723	0.1821	0.1544	1.6224	1.7150	1.4538
10	10.6220	-0.1909	-2.0304	0.1791	0.2580	0.1621	1.6857	2.4286	1.5259
11	10.6257	-0.0125	-1.9993	0.1826	0.2775	0.1617	1.7186	2.6116	1.5218
12	10.5860	-0.1606	-2.2036	0.1716	0.1882	0.1499	1.6213	1.7774	1.4157

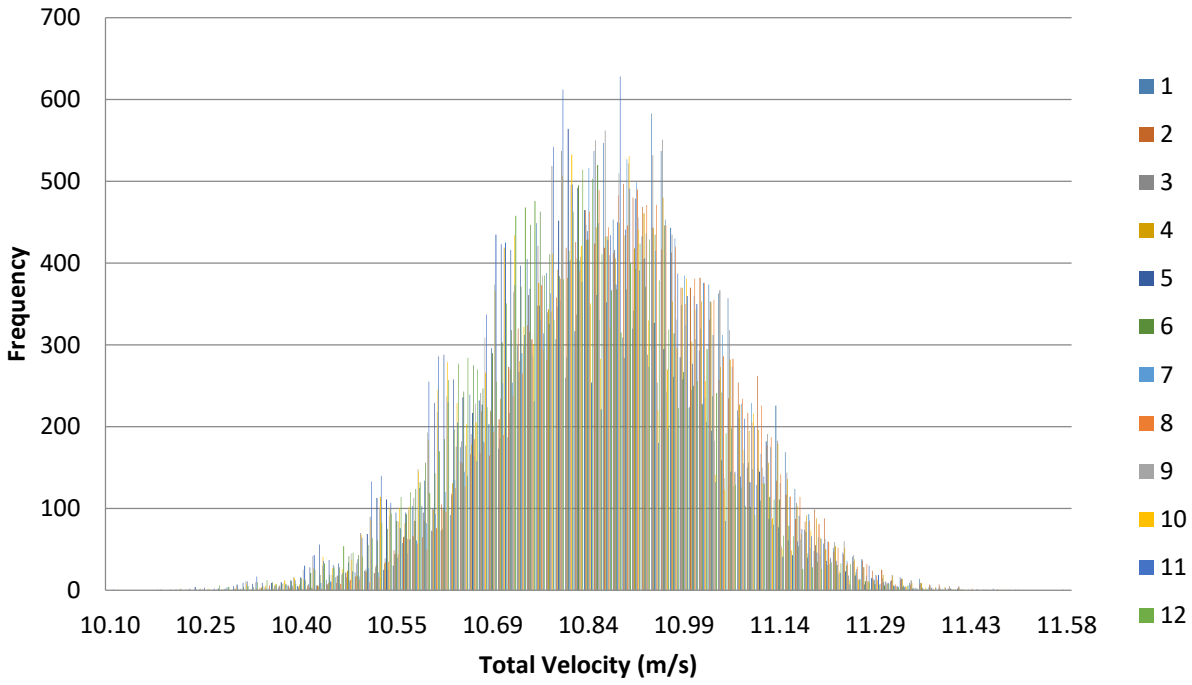


Figure 1. Velocity histogram for each interval (100 bins).

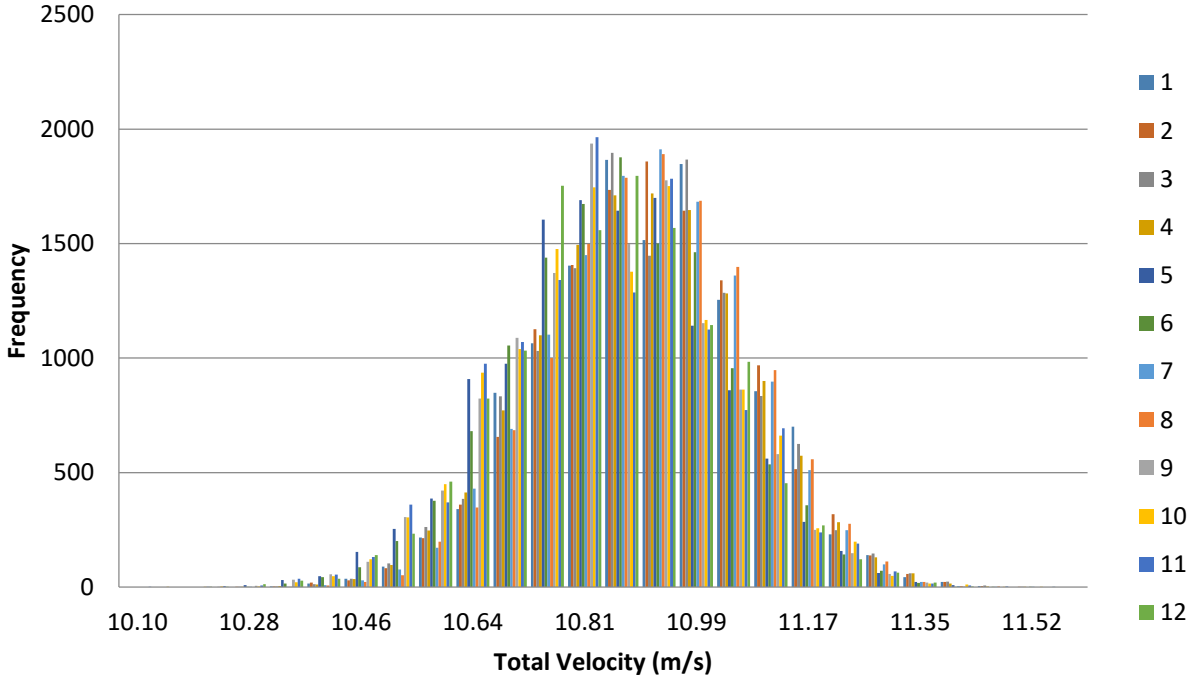
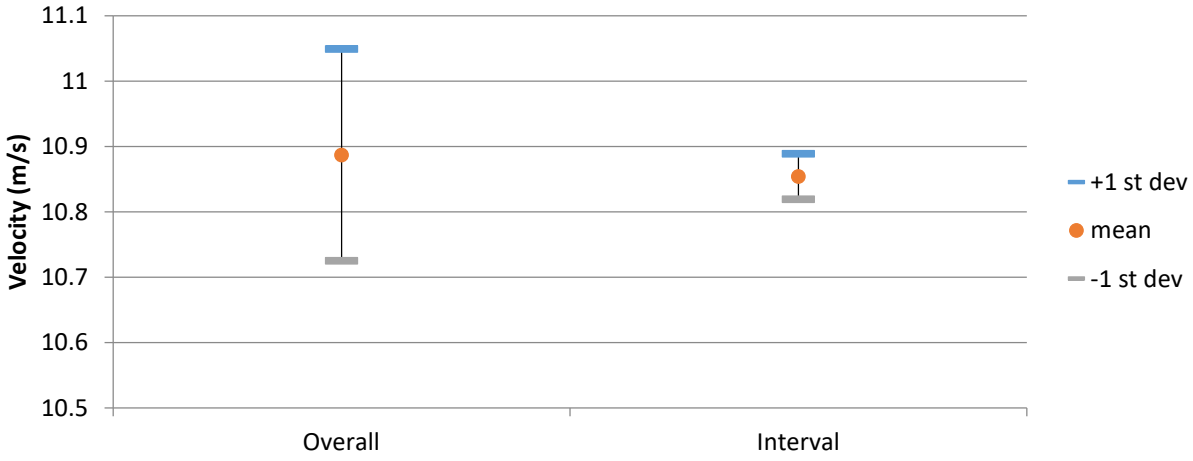
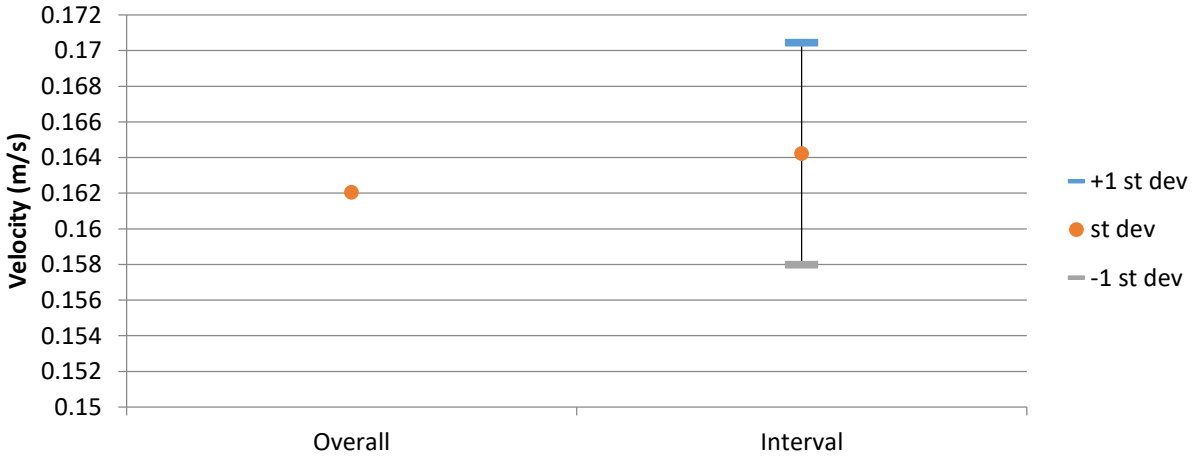


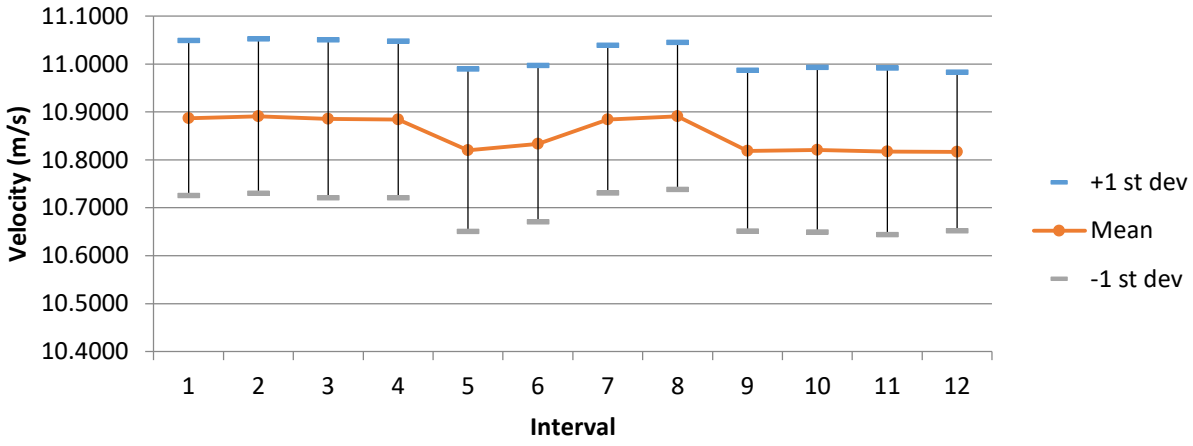
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 293
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 09:49:29.437

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.2410	6.0870	5.6856	0.0853
u	5.1500	6.0500	5.6155	0.0981
v	-1.1700	1.7600	0.1301	0.5043
w	-1.9000	0.4270	-0.6513	0.3068

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	6.0788	5.2410	5.7005	0.0834	1.4633
2	6.0283	5.4476	5.6986	0.0734	1.2880
3	6.0292	5.3864	5.6833	0.0822	1.4462
4	5.9770	5.3344	5.6528	0.0798	1.4116
5	6.0251	5.3843	5.6902	0.0778	1.3675
6	6.0039	5.4642	5.7249	0.0766	1.3388
7	5.9684	5.4004	5.7035	0.0779	1.3653
8	5.9764	5.3856	5.6896	0.0774	1.3600
9	5.9245	5.3305	5.6227	0.0779	1.3849
10	6.0185	5.3589	5.6853	0.0838	1.4737
11	6.0870	5.4027	5.7322	0.0900	1.5707
12	5.9475	5.3077	5.6438	0.0730	1.2935
		Average	5.6856	0.0794	
		St Dev	0.0320	0.0048	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.5627	0.9239	-0.7389	0.0927	0.2216	0.3198	1.6672	3.9833	5.7488
2	5.5950	0.7411	-0.6516	0.0996	0.2332	0.3708	1.7797	4.1685	6.6272
3	5.6368	0.5972	-0.3471	0.0872	0.1448	0.1670	1.5468	2.5690	2.9627
4	5.5894	0.4963	-0.6268	0.0871	0.1801	0.2005	1.5584	3.2219	3.5880
5	5.6486	0.0943	-0.5698	0.0799	0.3162	0.1941	1.4151	5.5979	3.4362
6	5.6494	-0.1715	-0.8370	0.0826	0.2545	0.2510	1.4615	4.5041	4.4428
7	5.6511	-0.1566	-0.6917	0.0795	0.2170	0.2116	1.4070	3.8407	3.7450
8	5.6316	-0.2252	-0.7217	0.0806	0.2246	0.1861	1.4304	3.9879	3.3044
9	5.5080	-0.3984	-1.0095	0.0833	0.2118	0.2302	1.5130	3.8450	4.1789
10	5.6054	-0.1572	-0.8423	0.0908	0.3490	0.2107	1.6205	6.2255	3.7595
11	5.6974	0.1097	-0.3577	0.0936	0.4411	0.2503	1.6424	7.7418	4.3929
12	5.6112	-0.2928	-0.4220	0.0728	0.2731	0.1709	1.2966	4.8662	3.0450

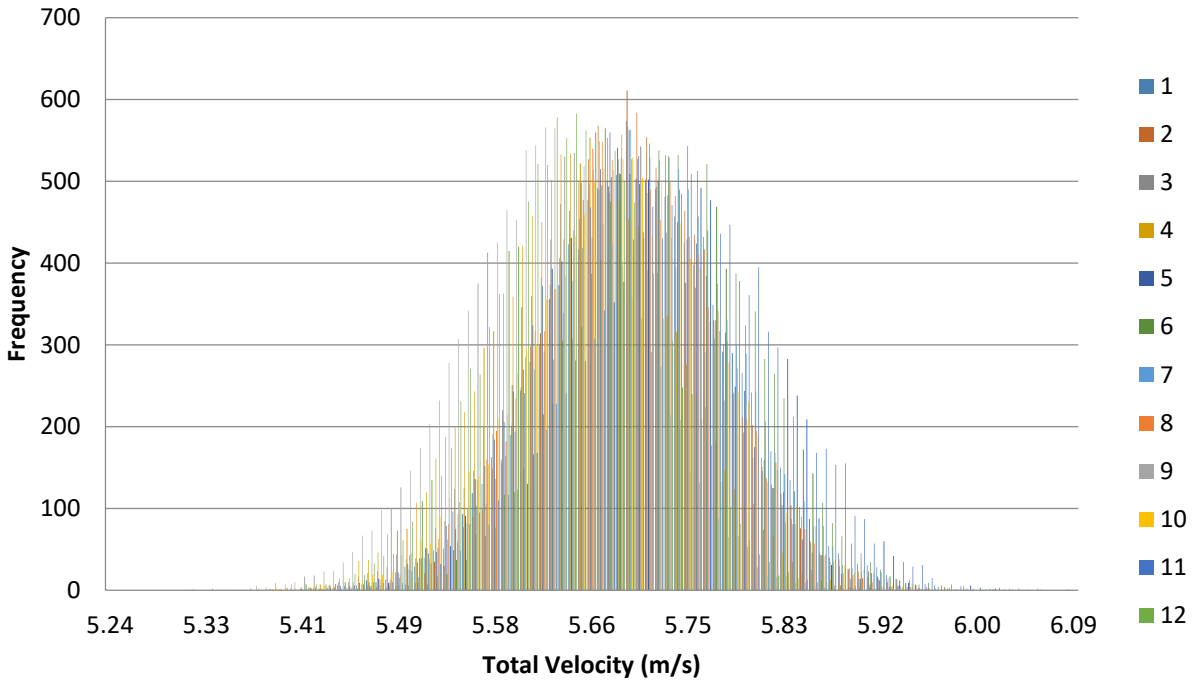


Figure 1. Velocity histogram for each interval (100 bins).

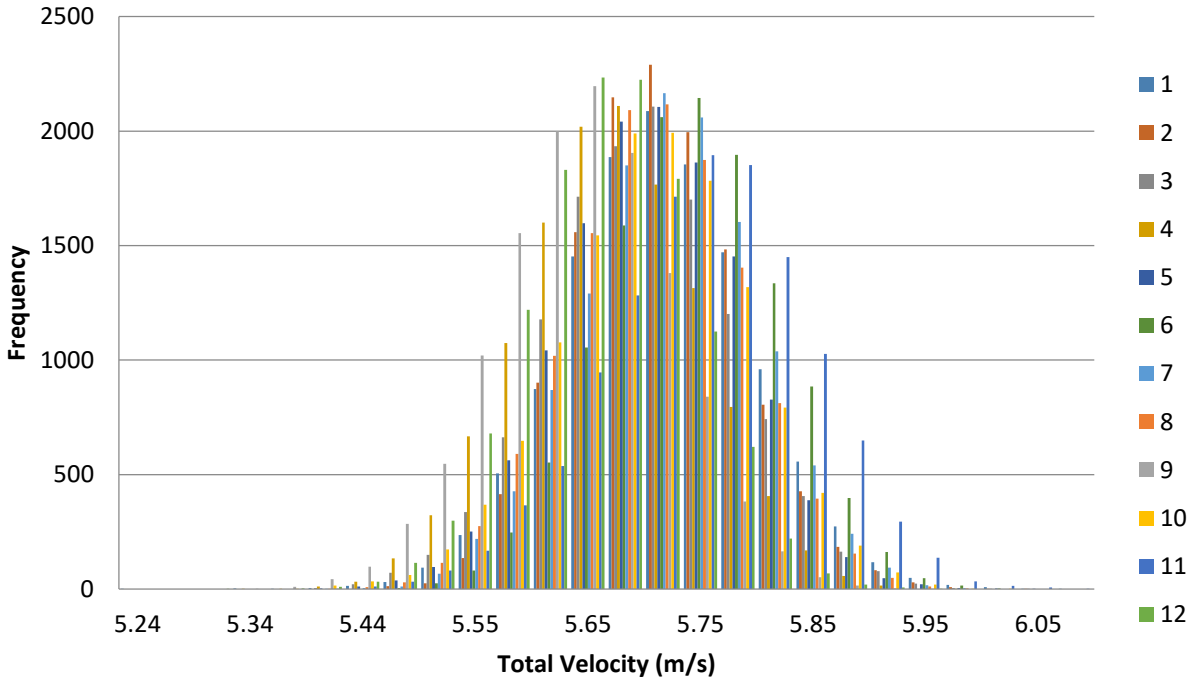
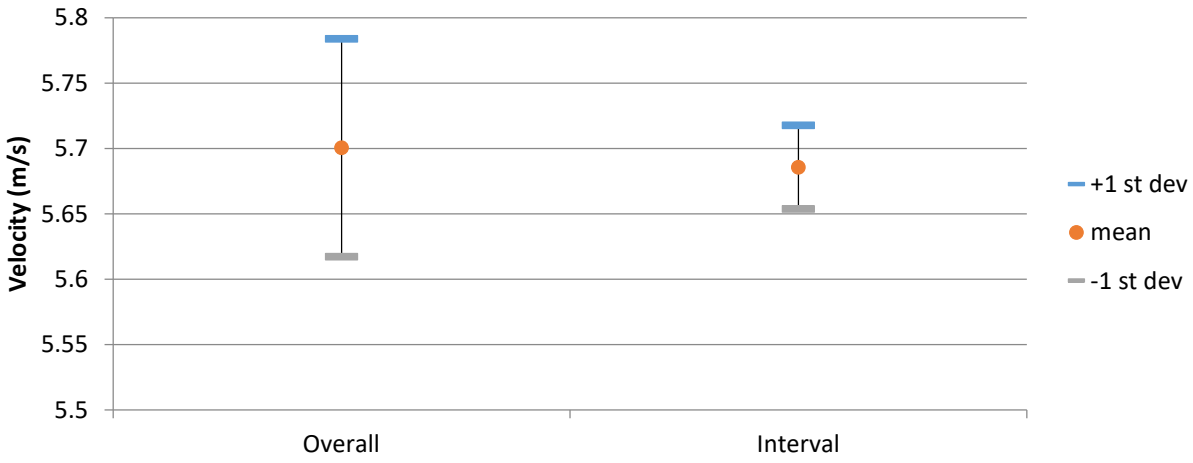
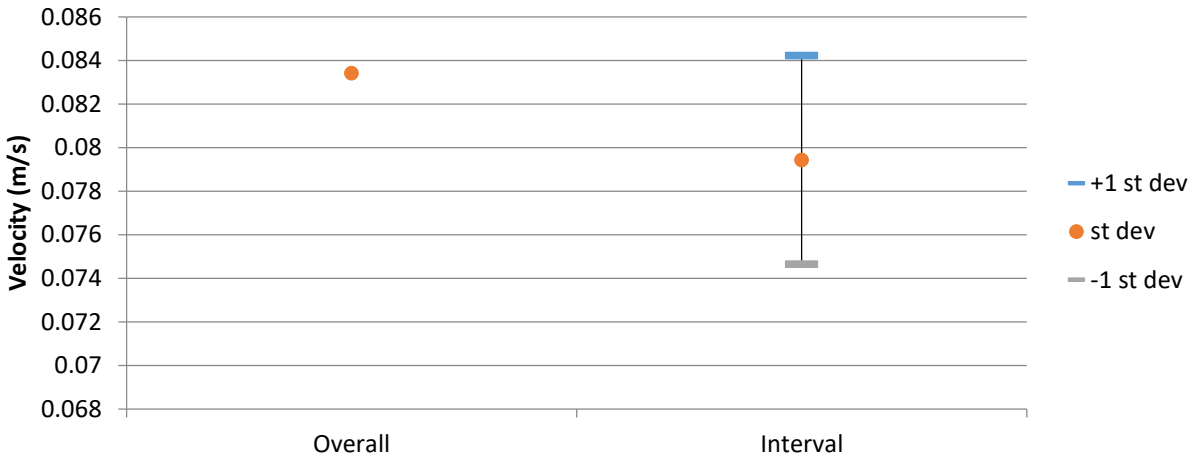


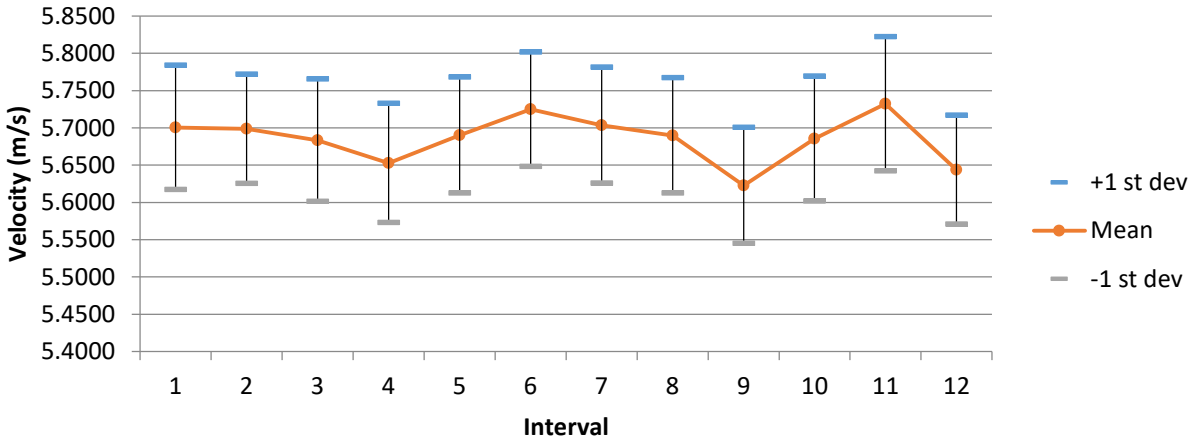
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 294
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 09:53:18.359

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.1838	11.6070	10.8948	0.1655
u	9.8100	11.3000	10.6115	0.1738
v	-1.0300	1.0300	-0.1951	0.2269
w	-3.7200	-1.5300	-2.4349	0.2693

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.5159	10.2662	10.9230	0.1577	1.4436
2	11.4764	10.2092	10.8711	0.1629	1.4980
3	11.4703	10.2250	10.8704	0.1695	1.5594
4	11.4090	10.2695	10.8793	0.1667	1.5322
5	11.5330	10.2457	10.9133	0.1684	1.5427
6	11.4720	10.2284	10.9191	0.1587	1.4531
7	11.4789	10.2151	10.9129	0.1625	1.4889
8	11.4309	10.2341	10.8622	0.1688	1.5544
9	11.4871	10.1838	10.8710	0.1632	1.5009
10	11.4839	10.2673	10.8671	0.1600	1.4722
11	11.4924	10.3007	10.8978	0.1579	1.4491
12	11.6070	10.2493	10.9503	0.1625	1.4840
		Average	10.8948	0.1632	
		St Dev	0.0285	0.0043	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.6122	-0.3485	-2.5511	0.1668	0.1907	0.1604	1.5713	1.7971	1.5116
2	10.6610	-0.0348	-2.1127	0.1702	0.1828	0.1535	1.5960	1.7146	1.4394
3	10.6406	-0.0527	-2.2106	0.1787	0.1627	0.1513	1.6792	1.5290	1.4219
4	10.6266	-0.1555	-2.3111	0.1731	0.1714	0.1916	1.6288	1.6126	1.8034
5	10.6382	-0.0402	-2.4063	0.1728	0.1890	0.3167	1.6248	1.7768	2.9766
6	10.5855	-0.2700	-2.6479	0.1714	0.1865	0.2282	1.6196	1.7619	2.1559
7	10.6121	-0.2129	-2.5241	0.1693	0.1554	0.1786	1.5957	1.4644	1.6828
8	10.6191	-0.1691	-2.2686	0.1769	0.1760	0.1207	1.6660	1.6570	1.1367
9	10.5981	-0.3611	-2.3761	0.1702	0.2232	0.1735	1.6058	2.1056	1.6368
10	10.5857	-0.3313	-2.4223	0.1679	0.1875	0.1434	1.5861	1.7713	1.3544
11	10.5742	-0.3179	-2.6045	0.1700	0.1722	0.1742	1.6079	1.6289	1.6469
12	10.5840	-0.0479	-2.7839	0.1747	0.2593	0.2503	1.6506	2.4496	2.3653

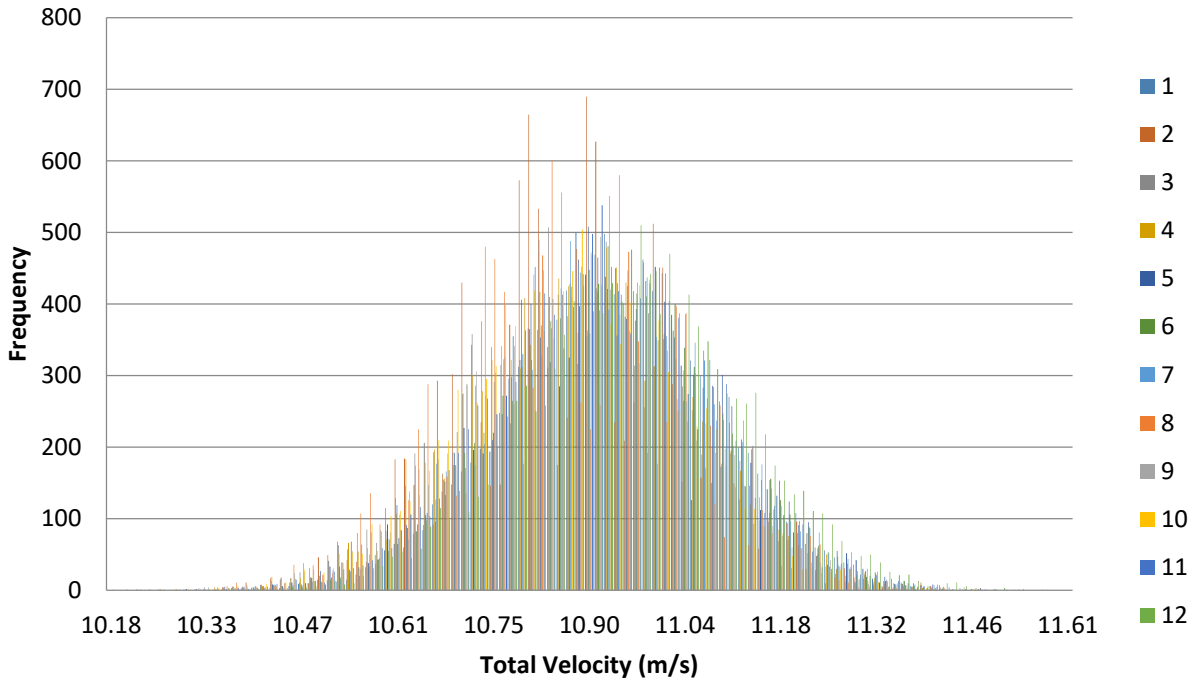


Figure 1. Velocity histogram for each interval (100 bins).

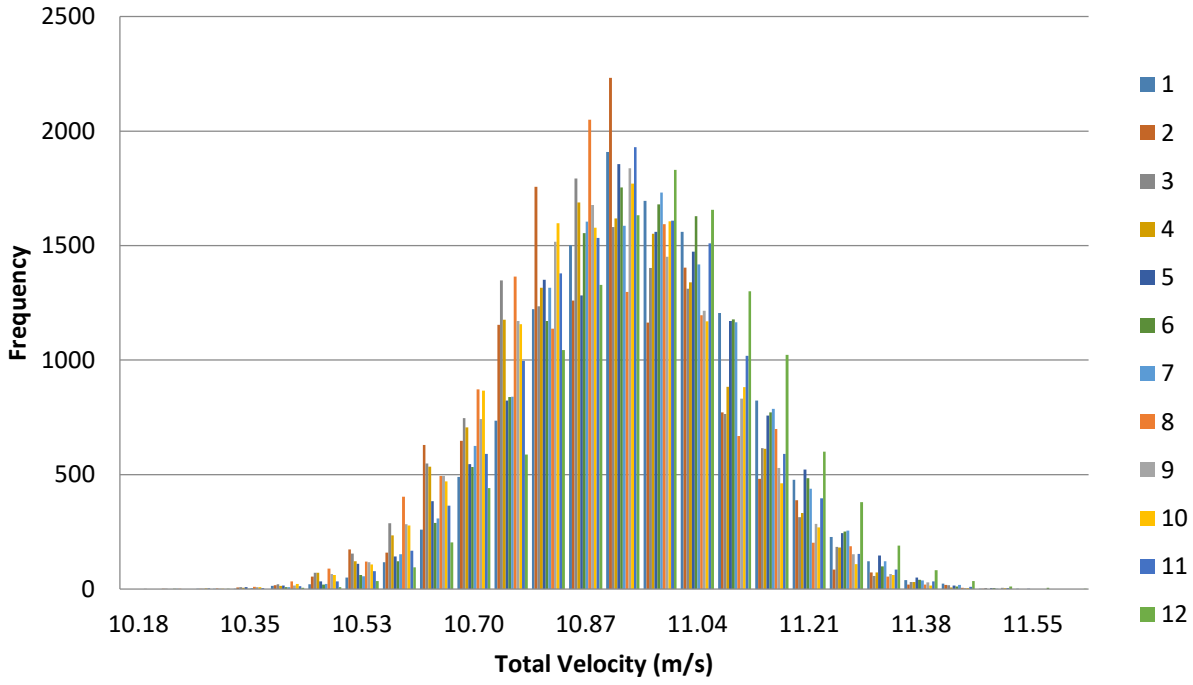
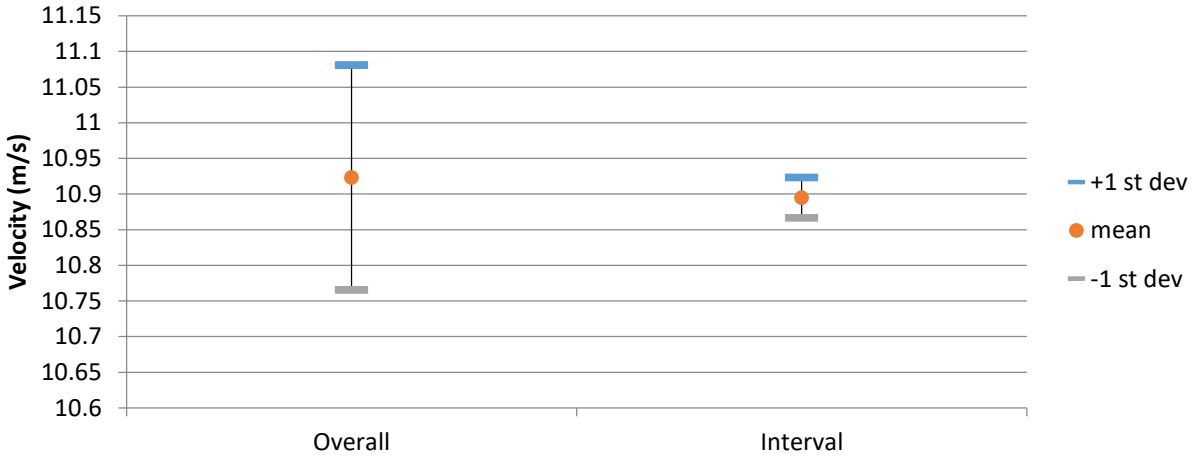
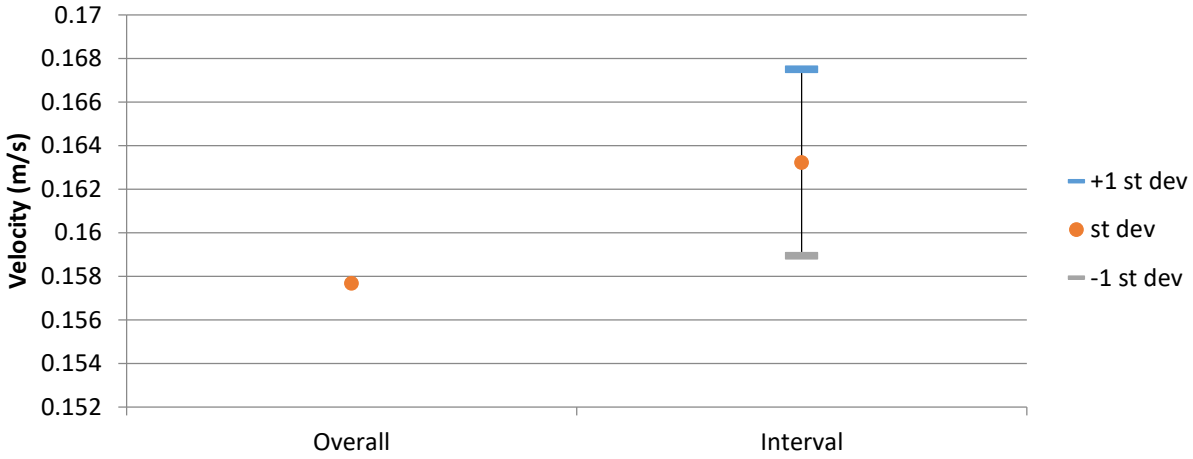


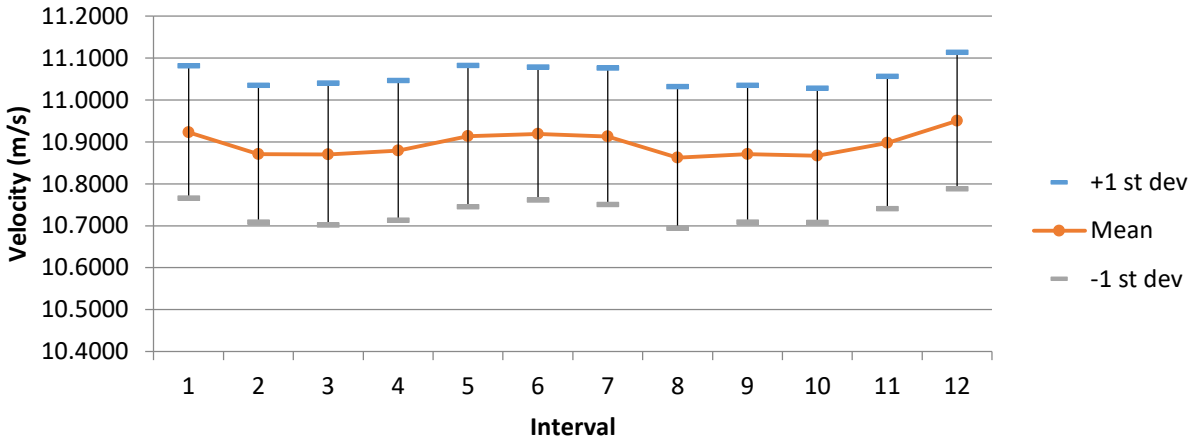
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 295
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 09:57:12.500

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.2910	5.8963	5.6066	0.0692
u	5.1200	5.8300	5.4864	0.0725
v	-0.4630	0.5030	0.0060	0.1279
w	-1.6100	-0.6820	-1.1389	0.1365

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.8862	5.3429	5.5937	0.0697	1.2462
2	5.8822	5.3509	5.5973	0.0694	1.2392
3	5.8477	5.2935	5.5965	0.0676	1.2073
4	5.8716	5.2959	5.5886	0.0729	1.3046
5	5.8403	5.3269	5.5926	0.0678	1.2117
6	5.8963	5.3597	5.6068	0.0647	1.1535
7	5.8544	5.3884	5.6334	0.0644	1.1432
8	5.8889	5.3596	5.6522	0.0641	1.1336
9	5.8370	5.3756	5.6165	0.0616	1.0975
10	5.8382	5.3492	5.6057	0.0635	1.1333
11	5.8608	5.3426	5.5974	0.0664	1.1860
12	5.8774	5.2910	5.5980	0.0683	1.2198
		Average	5.6066	0.0667	
		St Dev	0.0189	0.0032	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.5060	-0.0225	-0.9761	0.0775	0.0959	0.0985	1.4068	1.7415	1.7881
2	5.4991	0.0627	-1.0310	0.0788	0.0890	0.1168	1.4328	1.6188	2.1247
3	5.4809	-0.0423	-1.1243	0.0718	0.1005	0.0690	1.3098	1.8329	1.2584
4	5.4901	-0.0853	-1.0368	0.0769	0.0693	0.0631	1.4010	1.2621	1.1494
5	5.4905	0.0590	-1.0491	0.0727	0.1127	0.1156	1.3233	2.0527	2.1057
6	5.4920	0.0642	-1.1237	0.0691	0.0666	0.0537	1.2581	1.2124	0.9773
7	5.4879	0.1311	-1.2547	0.0700	0.1168	0.1088	1.2748	2.1281	1.9830
8	5.4822	0.1174	-1.3637	0.0701	0.0941	0.0985	1.2794	1.7165	1.7964
9	5.4762	0.0834	-1.2408	0.0669	0.0718	0.0581	1.2217	1.3103	1.0617
10	5.4752	-0.0350	-1.1969	0.0676	0.0918	0.0553	1.2342	1.6760	1.0104
11	5.4738	-0.0741	-1.1630	0.0701	0.0824	0.0514	1.2802	1.5055	0.9387
12	5.4830	-0.1860	-1.1075	0.0704	0.0670	0.0906	1.2838	1.2218	1.6530

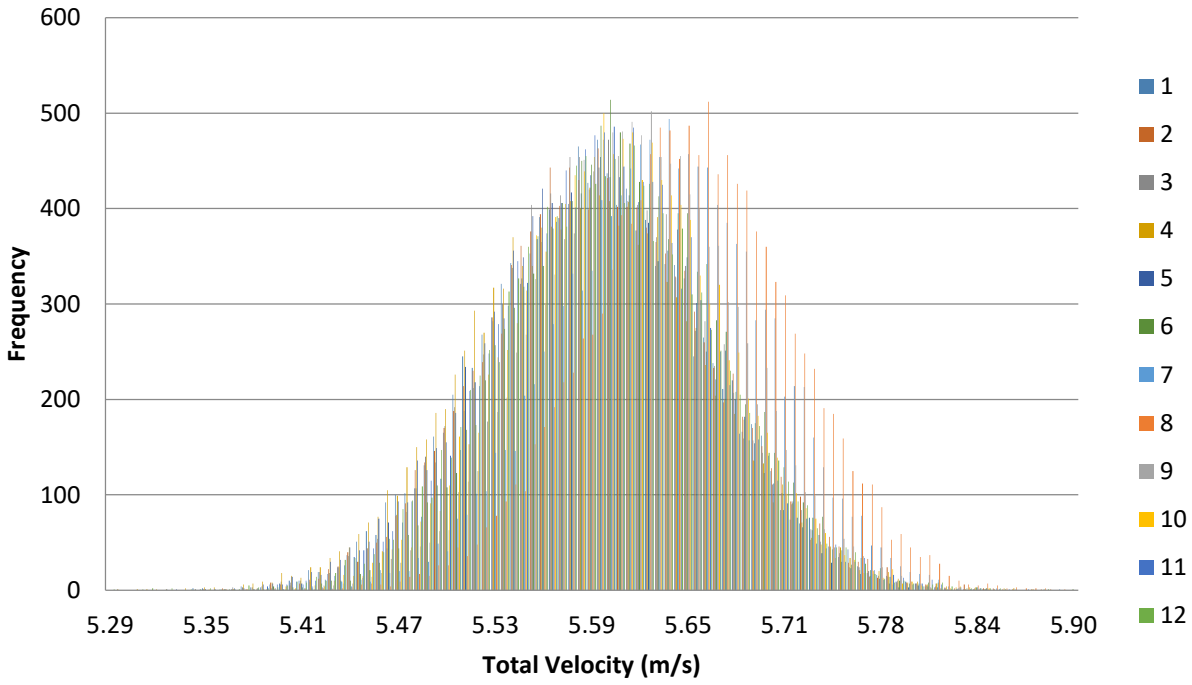


Figure 1. Velocity histogram for each interval (100 bins).

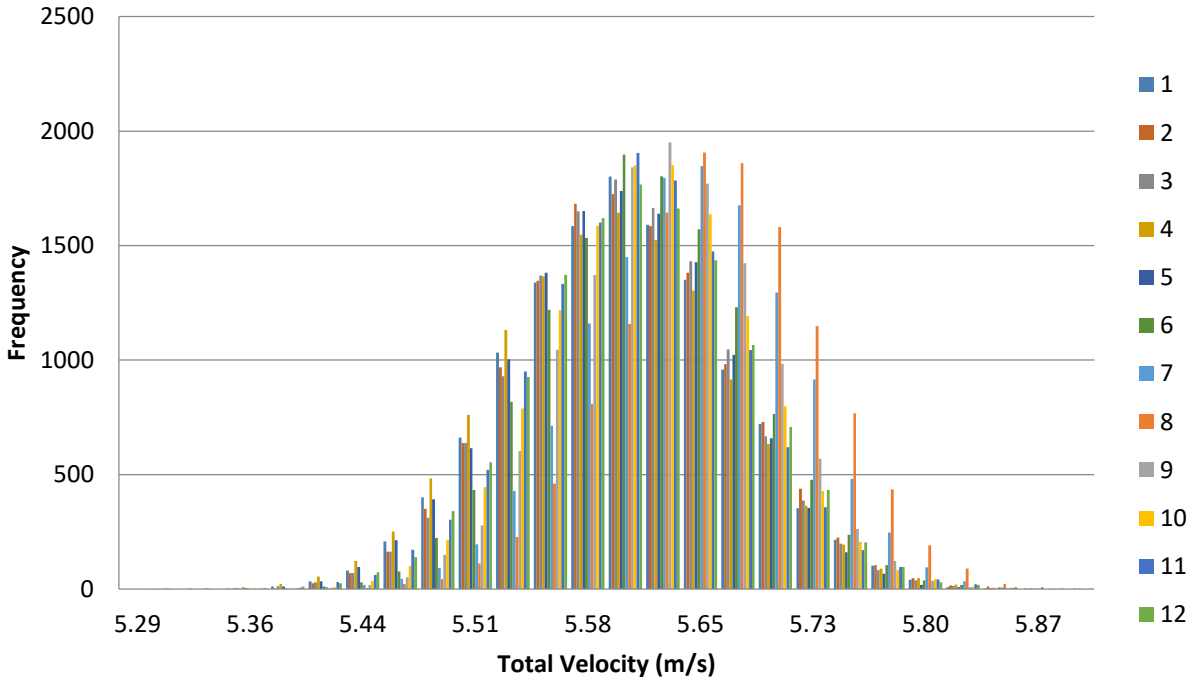
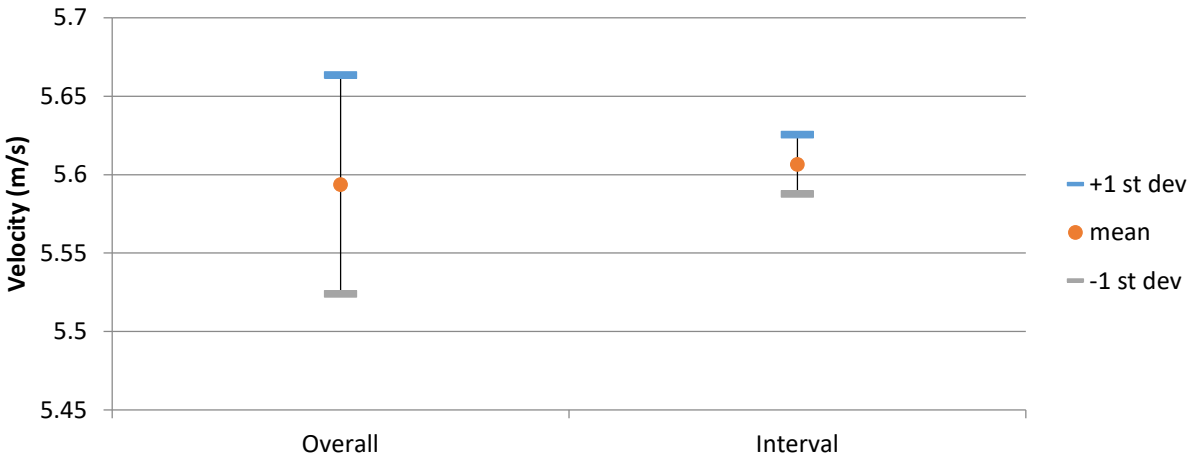
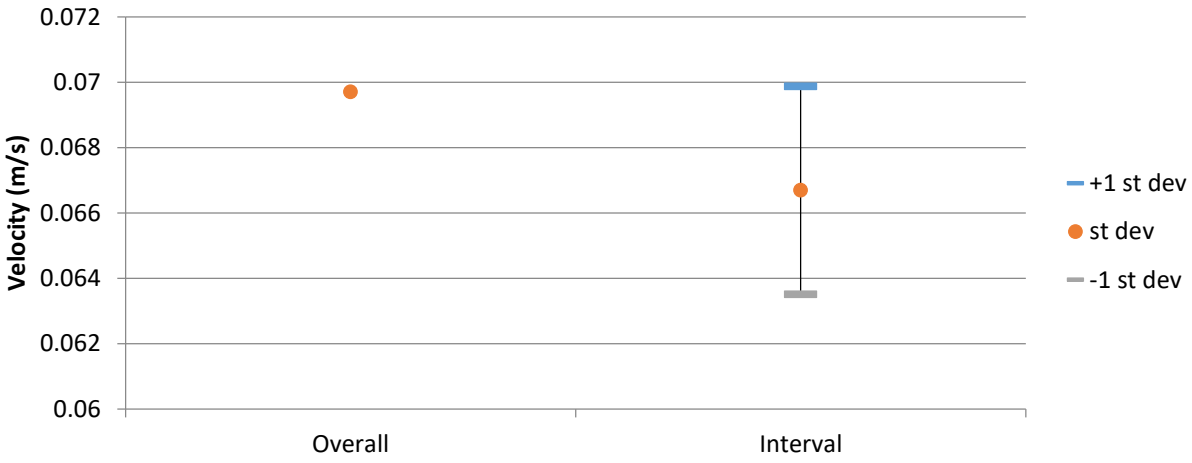


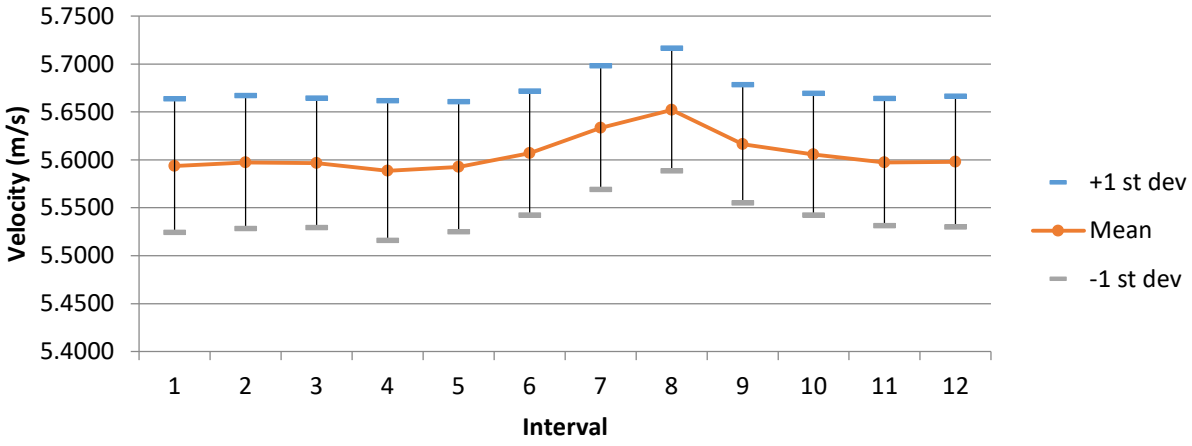
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 296
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 10:01:26.718

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.0981	12.4933	10.9622	0.2490
u	8.4000	12.2000	10.5255	0.3197
v	-1.3000	4.4500	0.2791	0.8270
w	-7.3600	-0.1030	-2.8143	0.8131

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.5275	10.1914	10.9167	0.1917	1.7563
2	11.5224	10.1712	10.8294	0.1736	1.6034
3	11.4360	10.1211	10.8360	0.1653	1.5252
4	11.4681	10.1893	10.8498	0.1646	1.5170
5	11.4826	10.1690	10.8551	0.1725	1.5891
6	11.4999	10.2623	10.9222	0.1727	1.5810
7	11.6773	10.2171	10.9648	0.1956	1.7843
8	11.6875	10.0981	10.8968	0.2091	1.9188
9	11.9022	10.1722	10.9723	0.2498	2.2763
10	12.4933	10.5269	11.3885	0.2597	2.2800
11	12.3662	10.3284	11.0646	0.2102	1.8995
12	11.9165	10.2301	11.0509	0.2040	1.8458
		Average	10.9623	0.1974	
		St Dev	0.1554	0.0315	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.5835	-0.2028	-2.5770	0.1848	0.2253	0.6590	1.7464	2.1286	6.2267
2	10.5939	-0.3573	-2.2027	0.1795	0.2012	0.1519	1.6945	1.8988	1.4337
3	10.5855	-0.4468	-2.2611	0.1703	0.1749	0.1481	1.6087	1.6518	1.3994
4	10.5917	-0.2735	-2.3201	0.1696	0.2112	0.1775	1.6011	1.9940	1.6756
5	10.5985	-0.1691	-2.3093	0.1716	0.2054	0.3188	1.6192	1.9380	3.0083
6	10.5567	-0.1801	-2.7553	0.1705	0.3070	0.3655	1.6151	2.9080	3.4624
7	10.5062	0.0125	-3.0464	0.2288	0.4036	0.6234	2.1775	3.8413	5.9337
8	10.2828	0.1054	-3.5318	0.3064	0.4408	0.5232	2.9794	4.2869	5.0878
9	10.0630	1.0831	-4.1431	0.3684	0.6065	0.5894	3.6608	6.0275	5.8571
10	10.6465	1.7817	-3.3247	0.5393	0.6652	1.2067	5.0660	6.2478	11.3340
11	10.7334	1.1554	-2.3032	0.2072	0.5845	0.4889	1.9301	5.4456	4.5553
12	10.5655	0.8410	-2.9956	0.2699	0.6521	0.5956	2.5543	6.1720	5.6368

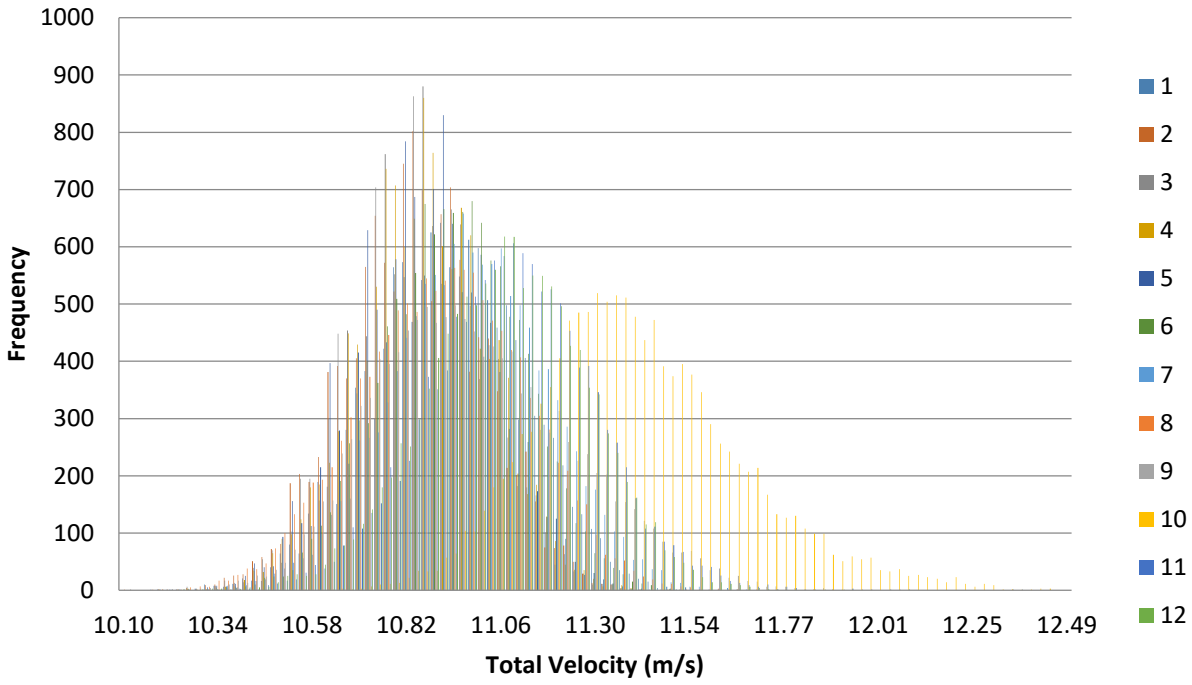


Figure 1. Velocity histogram for each interval (100 bins).

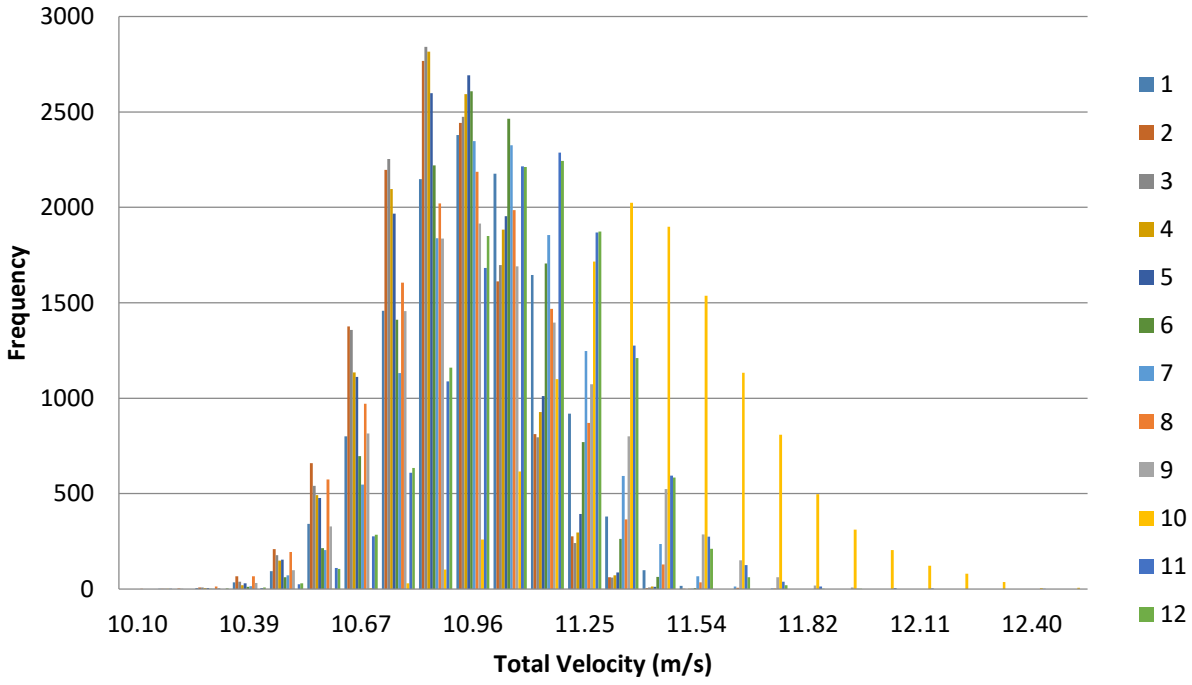
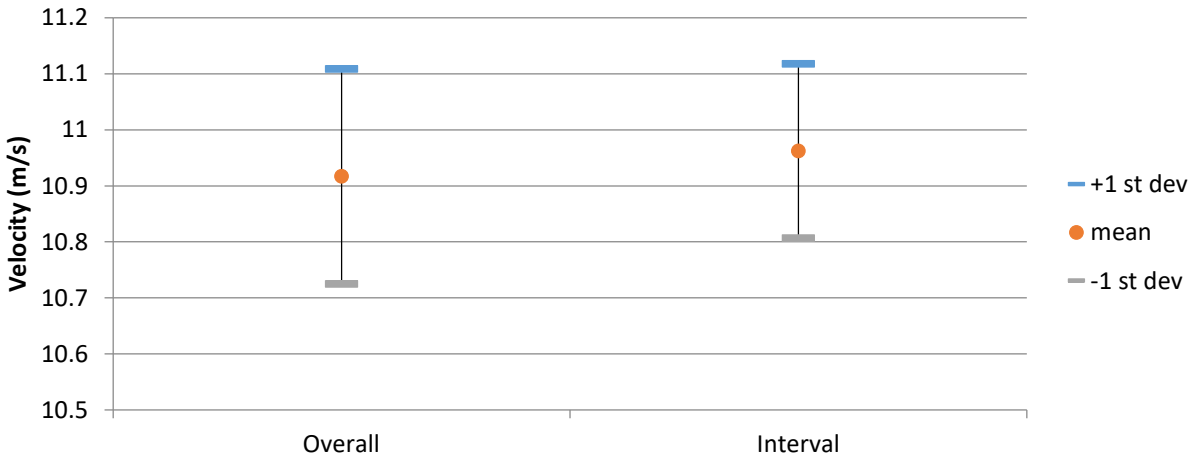
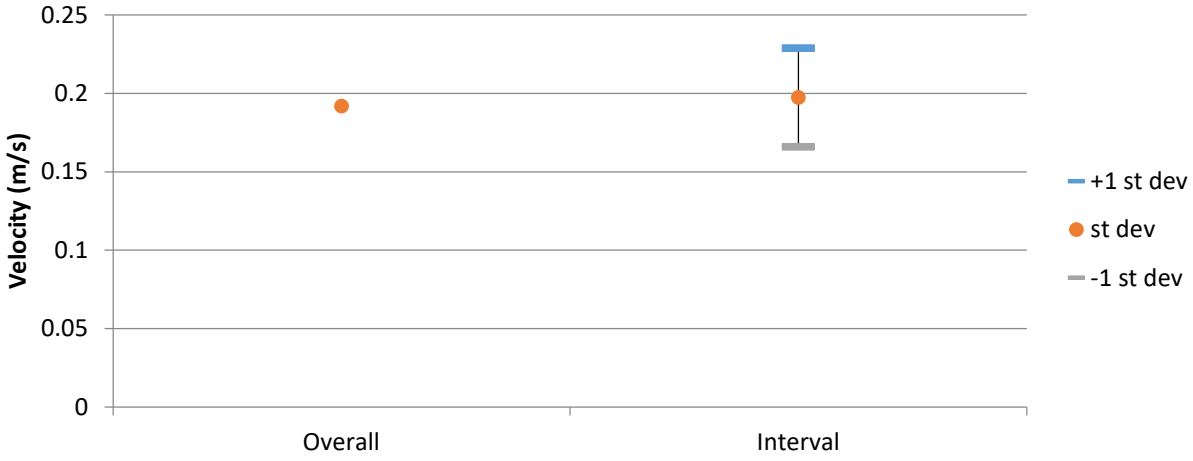


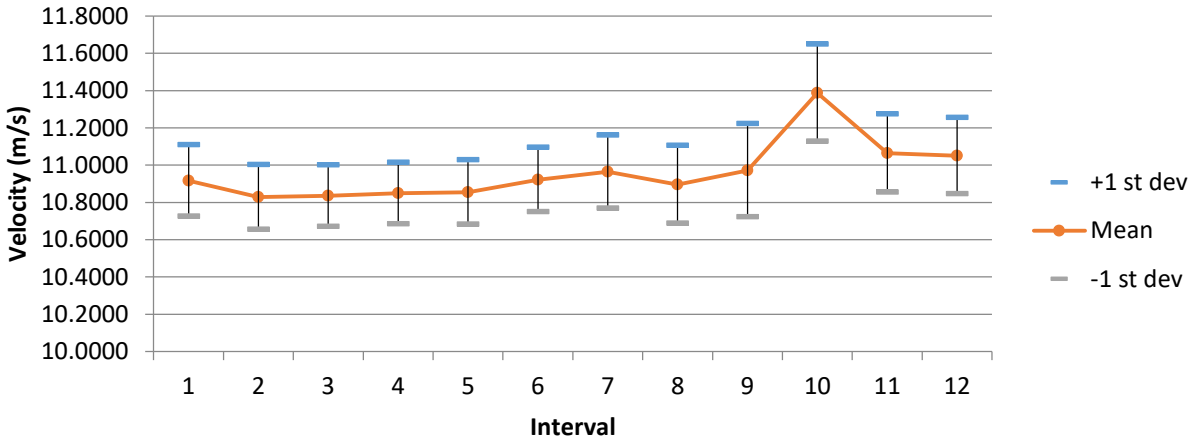
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 297
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 10:04:32.109

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.1433	7.0787	5.7329	0.1505
u	4.7600	6.1700	5.5003	0.1456
v	-1.3800	3.8600	0.2899	0.5970
w	-3.1000	-0.1680	-1.3984	0.4670

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	6.2387	5.2390	5.7003	0.1091	1.9132
2	6.2503	5.1433	5.6839	0.1132	1.9913
3	6.1320	5.3256	5.7146	0.0941	1.6470
4	6.0685	5.3591	5.6886	0.0949	1.6689
5	5.9364	5.3778	5.6555	0.0774	1.3688
6	6.6386	5.3648	5.8434	0.1693	2.8979
7	7.0787	5.4673	5.9223	0.2764	4.6671
8	6.1499	5.2955	5.7608	0.1055	1.8313
9	6.3300	5.2817	5.7684	0.1075	1.8641
10	6.2459	5.3195	5.7196	0.1006	1.7581
11	6.0987	5.3478	5.6751	0.0921	1.6221
12	5.9443	5.3328	5.6624	0.0801	1.4145
		Average	5.7329	0.1183	
		St Dev	0.0800	0.0550	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.5103	0.4859	-1.2375	0.1018	0.4801	0.3658	1.8473	8.7125	6.6378
2	5.5063	0.2067	-1.2777	0.1391	0.3296	0.4432	2.5255	5.9859	8.0493
3	5.5064	0.5652	-1.2629	0.1170	0.4958	0.4132	2.1240	9.0046	7.5046
4	5.5124	0.1519	-1.2647	0.0986	0.4748	0.3539	1.7887	8.6131	6.4194
5	5.5154	0.1016	-1.1712	0.0981	0.2705	0.3265	1.7780	4.9036	5.9198
6	5.5695	0.8843	-1.3207	0.1328	0.6674	0.4063	2.3838	11.9822	7.2954
7	5.4491	0.9512	-1.8591	0.2306	0.9229	0.4373	4.2327	16.9374	8.0254
8	5.4295	0.2493	-1.8208	0.1766	0.3647	0.4205	3.2518	6.7165	7.7449
9	5.5101	0.1088	-1.5903	0.1378	0.4764	0.3701	2.5008	8.6454	6.7170
10	5.3976	-0.0162	-1.8247	0.1509	0.3425	0.3466	2.7958	6.3461	6.4210
11	5.5310	-0.2347	-1.1847	0.0923	0.3242	0.2262	1.6690	5.8621	4.0900
12	5.5659	0.0252	-0.9673	0.1034	0.2730	0.2605	1.8583	4.9052	4.6811

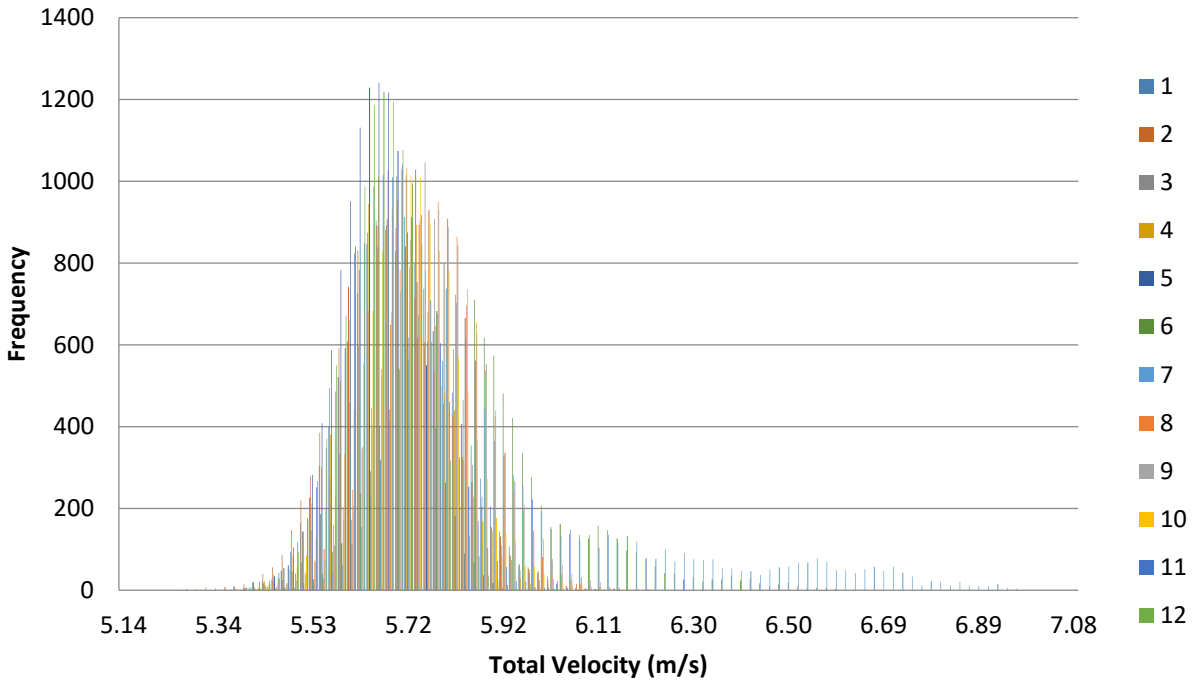


Figure 1. Velocity histogram for each interval (100 bins).

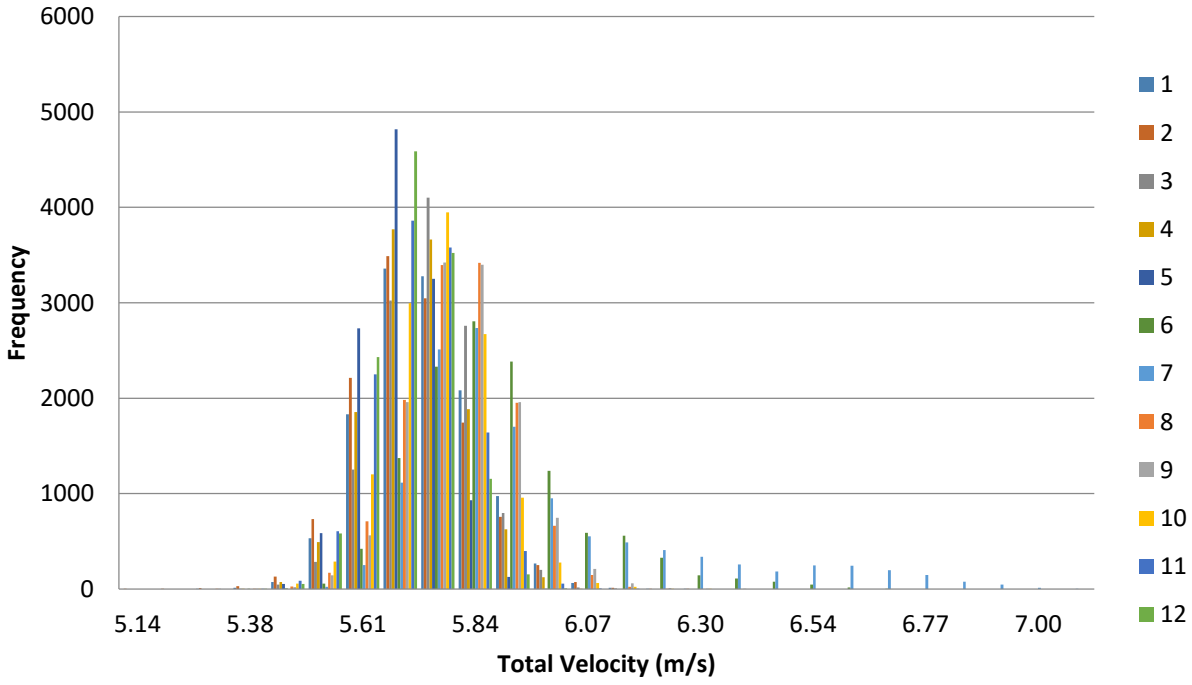
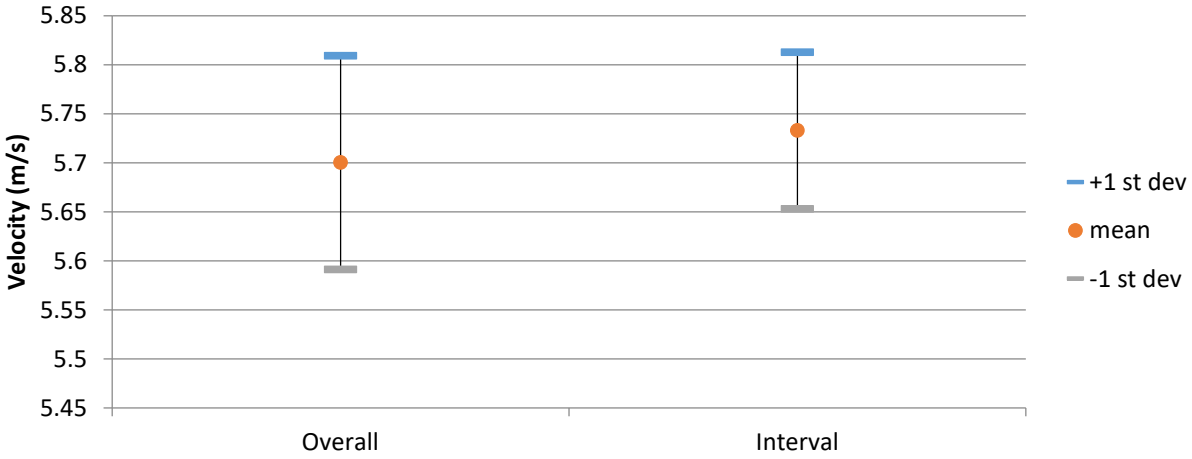
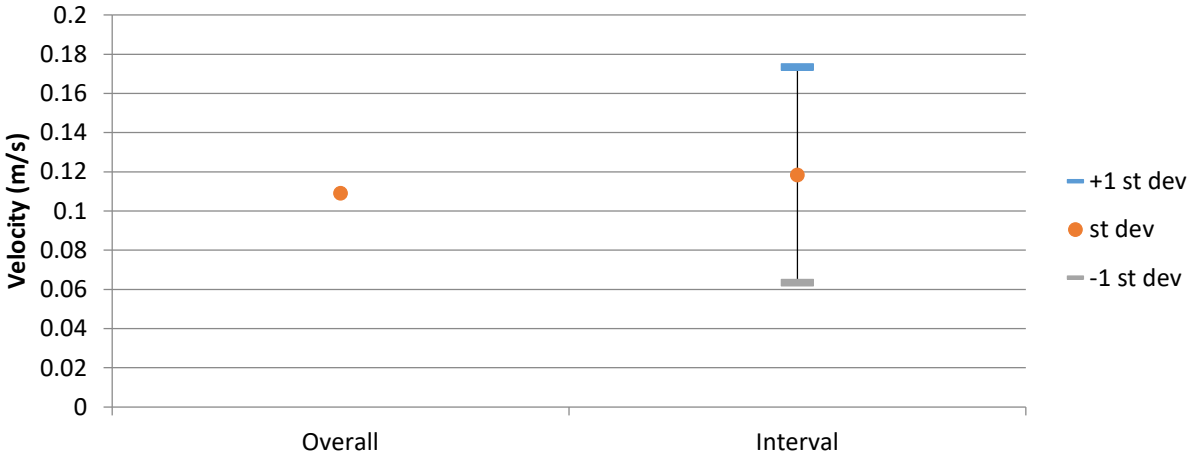


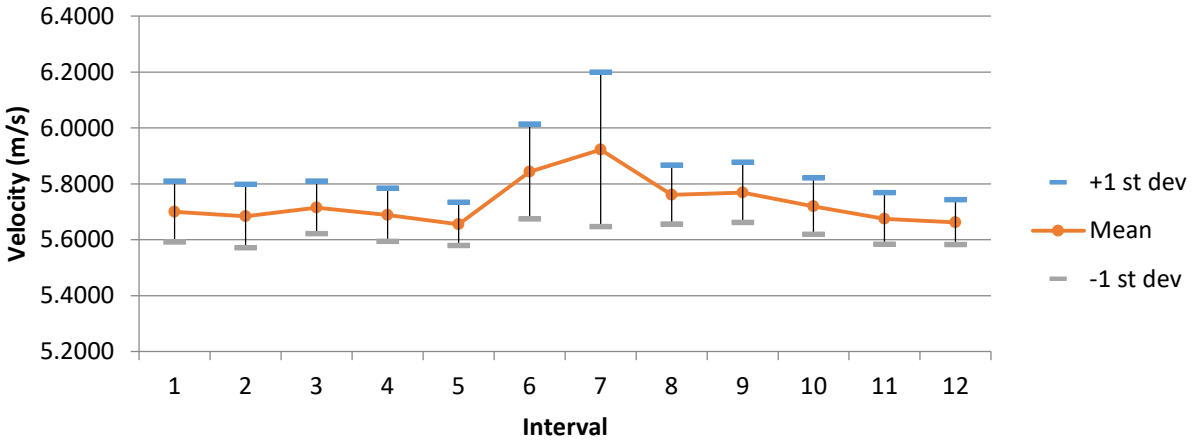
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 298
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 10:08:44.093

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.1101	12.8015	11.1095	0.2602
u	8.9000	12.4000	10.7151	0.3388
v	-2.3000	4.2600	0.7895	0.6881
w	-5.3900	1.4900	-2.6221	0.7665

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.7969	10.3691	11.0254	0.1883	1.7077
2	12.0256	10.3142	11.0847	0.2097	1.8916
3	11.6832	10.2241	10.9890	0.1859	1.6916
4	12.3888	10.1101	11.0315	0.2138	1.9379
5	11.8951	10.2155	11.0135	0.1974	1.7922
6	11.8265	10.2153	10.9969	0.2056	1.8692
7	11.8028	10.1996	10.9979	0.2010	1.8273
8	11.9798	10.2290	11.0459	0.2222	2.0116
9	12.8015	10.3444	11.1932	0.3076	2.7482
10	12.4466	10.7300	11.5390	0.2118	1.8351
11	11.9495	10.3983	11.1903	0.1948	1.7405
12	11.8581	10.5391	11.2060	0.1746	1.5577
		Average	11.1094	0.2094	
		St Dev	0.1578	0.0337	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.6835	0.7779	-2.5537	0.1899	0.3596	0.4072	1.7779	3.3661	3.8112
2	10.6144	1.5015	-2.5933	0.3049	0.7212	0.8098	2.8729	6.7948	7.6290
3	10.7249	0.5045	-2.2586	0.1953	0.4431	0.4210	1.8214	4.1314	3.9250
4	10.7516	0.2605	-2.2643	0.2864	0.5012	0.7836	2.6636	4.6613	7.2881
5	10.4876	0.0402	-3.2361	0.3567	0.4885	0.7119	3.4011	4.6576	6.7880
6	10.4231	0.2316	-3.4469	0.2678	0.4414	0.3615	2.5690	4.2346	3.4685
7	10.5862	0.8643	-2.7076	0.2548	0.5338	0.7072	2.4067	5.0424	6.6800
8	10.5140	1.2628	-2.9955	0.3010	0.5401	0.7529	2.8631	5.1365	7.1608
9	10.7914	1.5391	-2.1636	0.3889	0.7380	1.0880	3.6034	6.8385	10.0823
10	11.1682	0.8165	-2.6824	0.2409	0.4625	0.5758	2.1573	4.1415	5.1557
11	10.9341	0.6802	-2.2132	0.1752	0.3335	0.4513	1.6022	3.0501	4.1271
12	10.9018	0.9946	-2.3502	0.1834	0.3439	0.3012	1.6824	3.1549	2.7630

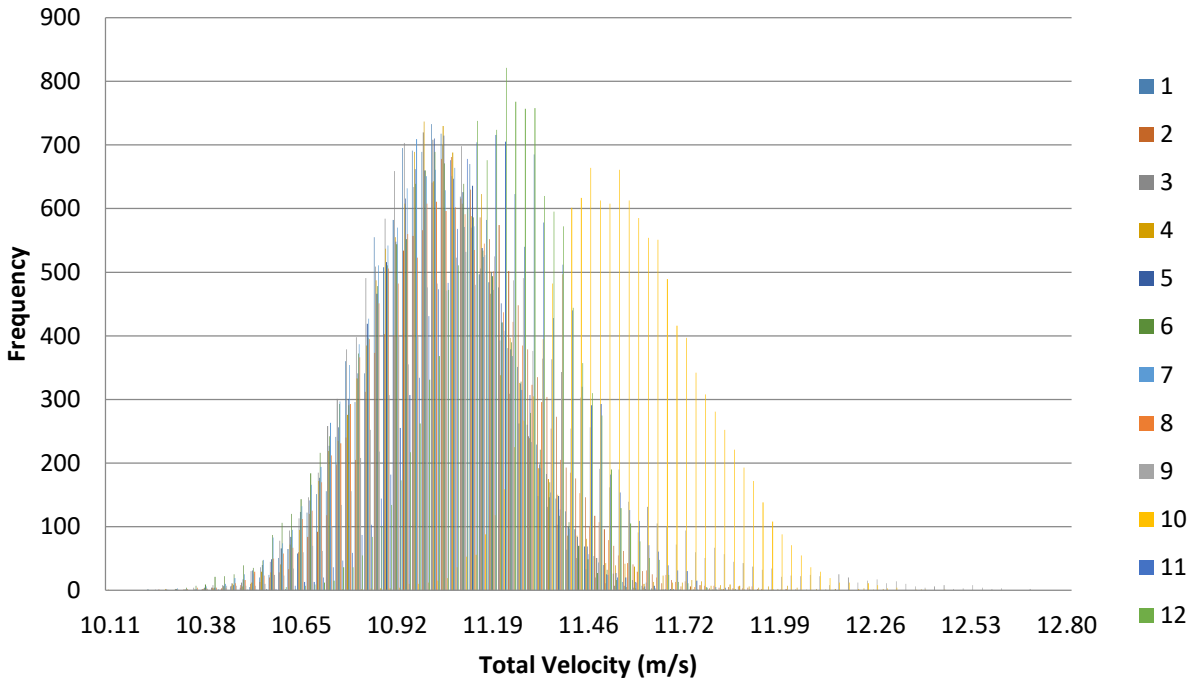


Figure 1. Velocity histogram for each interval (100 bins).

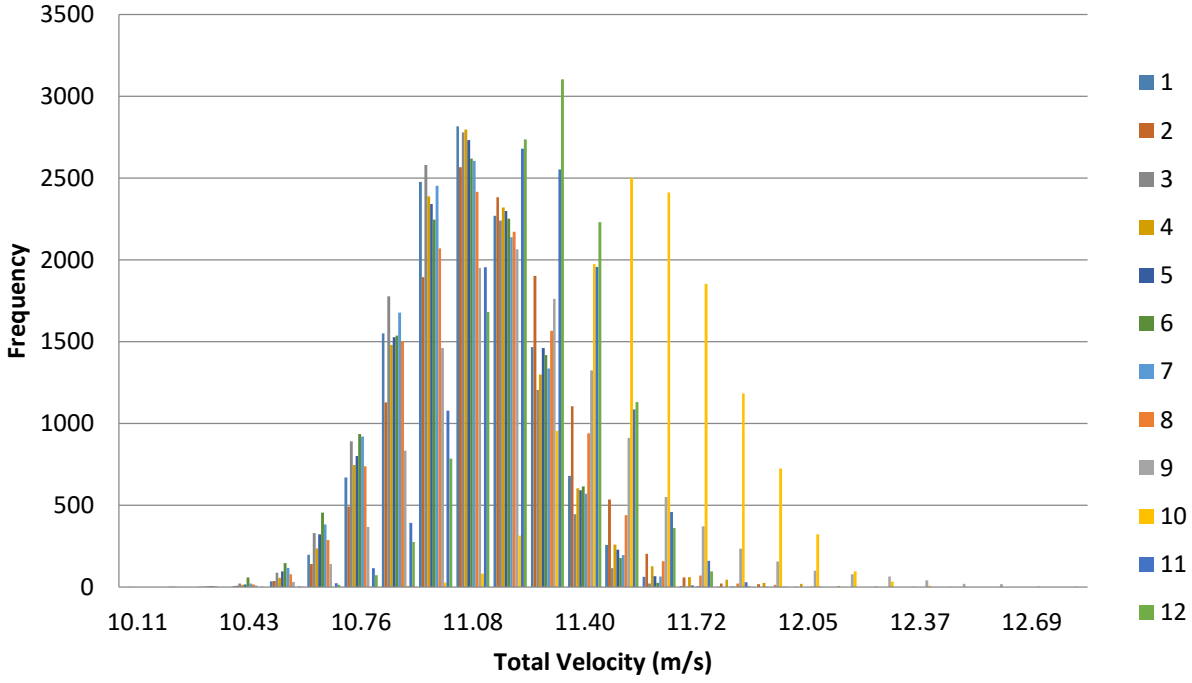
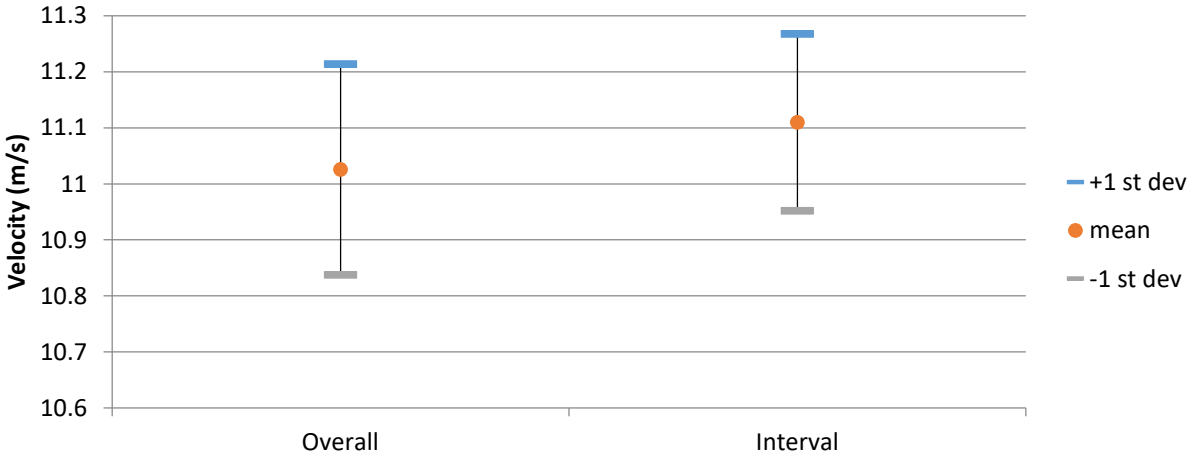
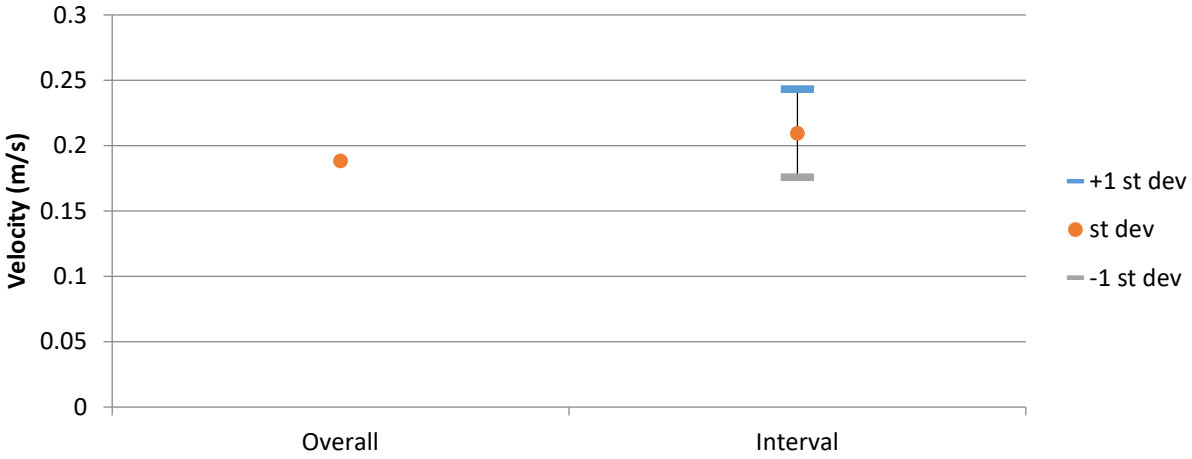


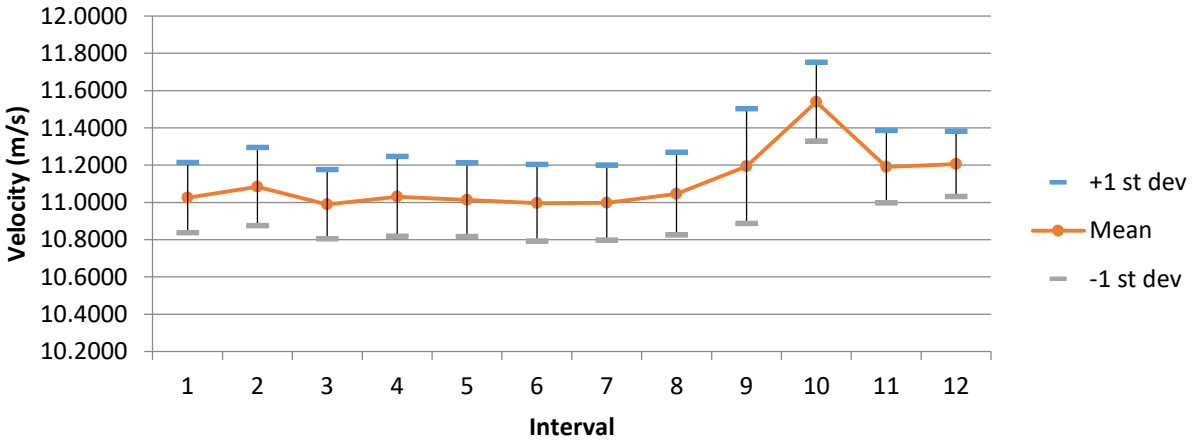
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 299
Blockage Condition: Existing Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 10:17:22.890

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	4.7157	6.8878	5.7339	0.1565
u	4.5600	6.5000	5.4910	0.1684
v	-3.5200	2.2700	-0.3829	0.6741
w	-2.9700	0.6530	-1.3652	0.5076

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	6.2952	5.3872	5.8128	0.1274	2.1923
2	6.8878	5.0691	6.0318	0.1737	2.8797
3	6.6371	5.1626	5.7120	0.1314	2.3005
4	6.1460	5.3448	5.6821	0.1077	1.8952
5	6.4697	5.3024	5.7750	0.1448	2.5075
6	6.5601	5.1410	5.6860	0.1704	2.9960
7	6.0837	5.3105	5.6696	0.1044	1.8418
8	6.2645	5.2849	5.7051	0.1204	2.1101
9	6.3112	4.7157	5.6848	0.1102	1.9377
10	5.8983	5.3958	5.6769	0.0681	1.1994
11	5.9062	5.4163	5.6853	0.0611	1.0747
12	6.0428	5.4149	5.6856	0.0742	1.3045
		Average	5.7339	0.1161	
		St Dev	0.1033	0.0367	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.5830	-0.6978	-1.3708	0.1501	0.2667	0.4188	2.6880	4.7767	7.5021
2	5.4889	-1.7980	-1.5197	0.2741	0.6512	0.4934	4.9930	11.8630	8.9882
3	5.5246	-0.9442	-0.8589	0.1263	0.5528	0.4151	2.2855	10.0057	7.5141
4	5.4894	-0.1928	-1.2583	0.1274	0.5613	0.4612	2.3201	10.2246	8.4011
5	5.5592	-0.4508	-1.4295	0.1142	0.2987	0.3444	2.0546	5.3727	6.1952
6	5.5117	-0.0452	-1.2029	0.1872	0.5525	0.4381	3.3961	10.0242	7.9478
7	5.2470	-0.4338	-2.0474	0.1632	0.3809	0.2701	3.1101	7.2590	5.1486
8	5.6013	0.1825	-0.7446	0.1181	0.5394	0.5432	2.1085	9.6306	9.6983
9	5.4851	-0.1310	-1.3786	0.1223	0.2993	0.4697	2.2292	5.4557	8.5639
10	5.4871	0.0285	-1.4299	0.0748	0.1287	0.2354	1.3627	2.3448	4.2909
11	5.4543	0.0232	-1.5958	0.0707	0.1260	0.0949	1.2968	2.3096	1.7401
12	5.4607	-0.1355	-1.5466	0.0875	0.1796	0.2487	1.6017	3.2886	4.5551

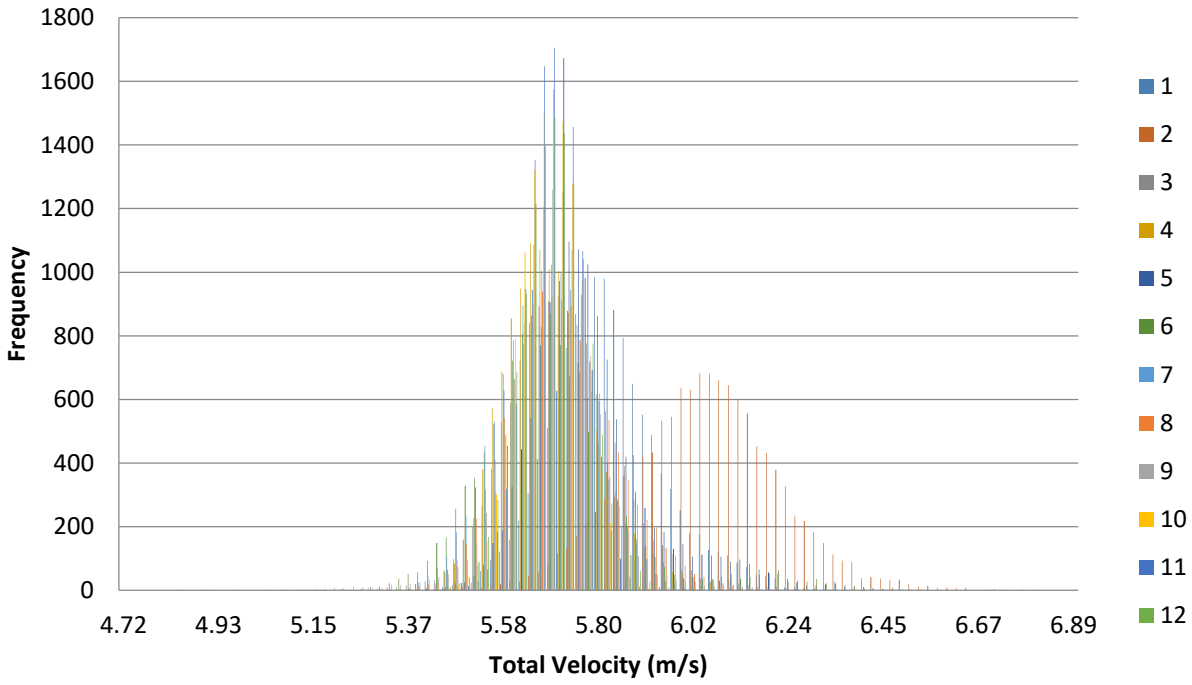


Figure 1. Velocity histogram for each interval (100 bins).

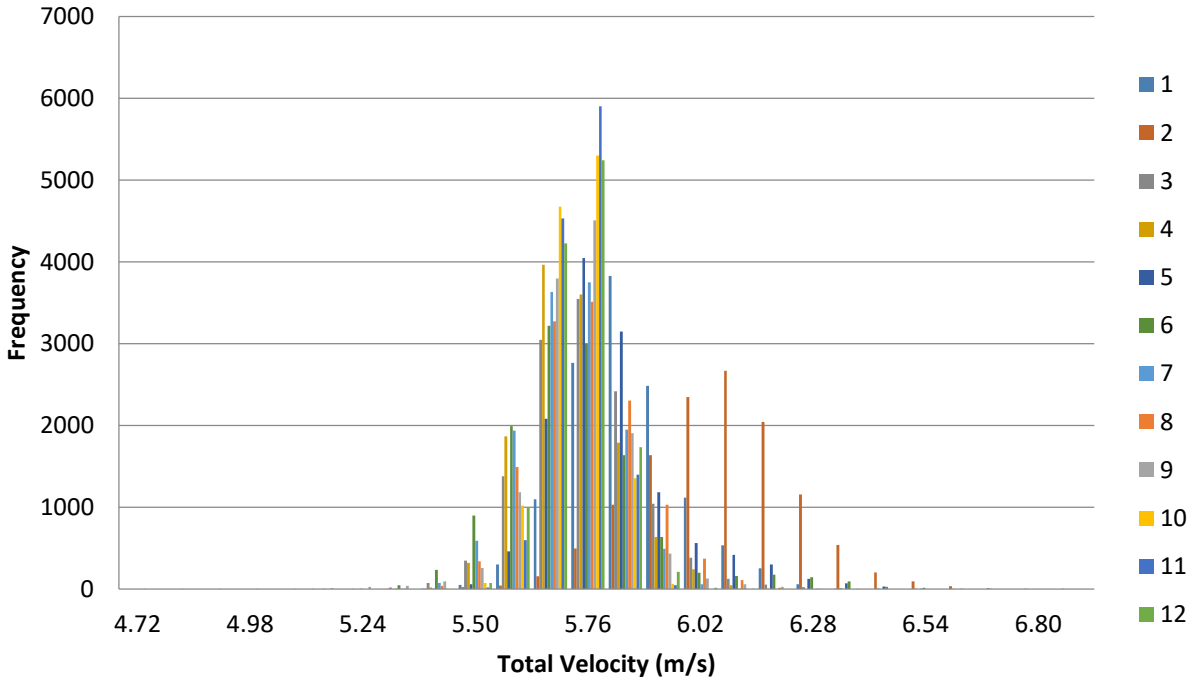
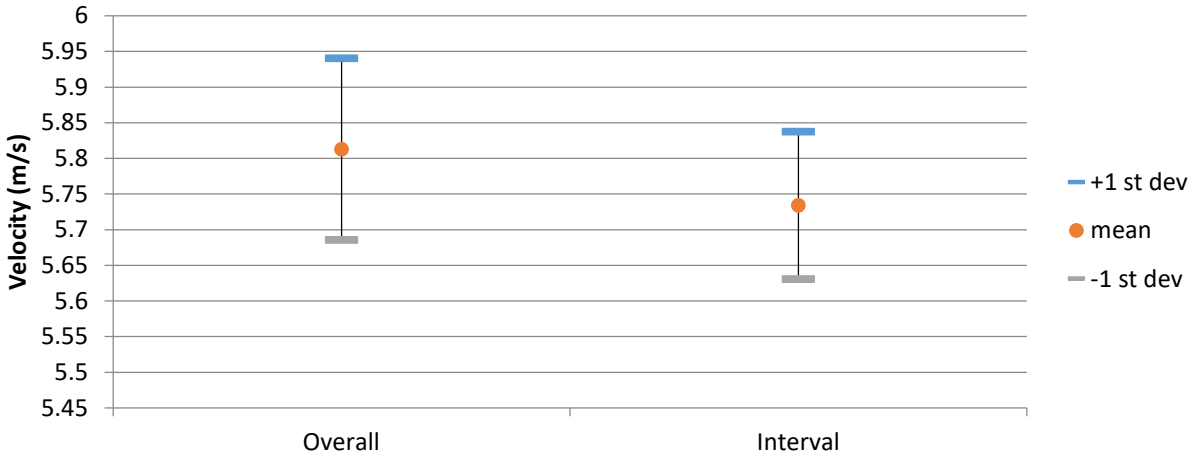
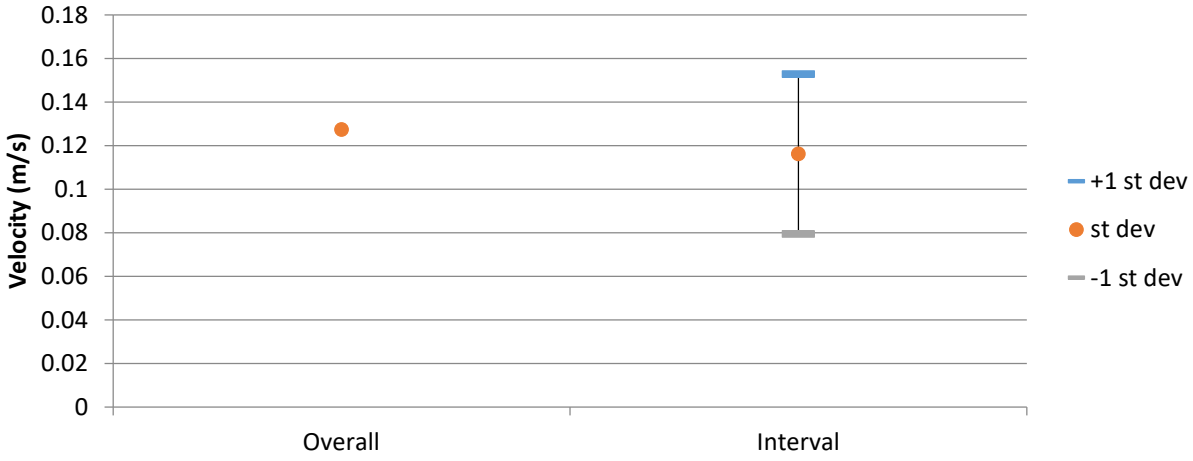


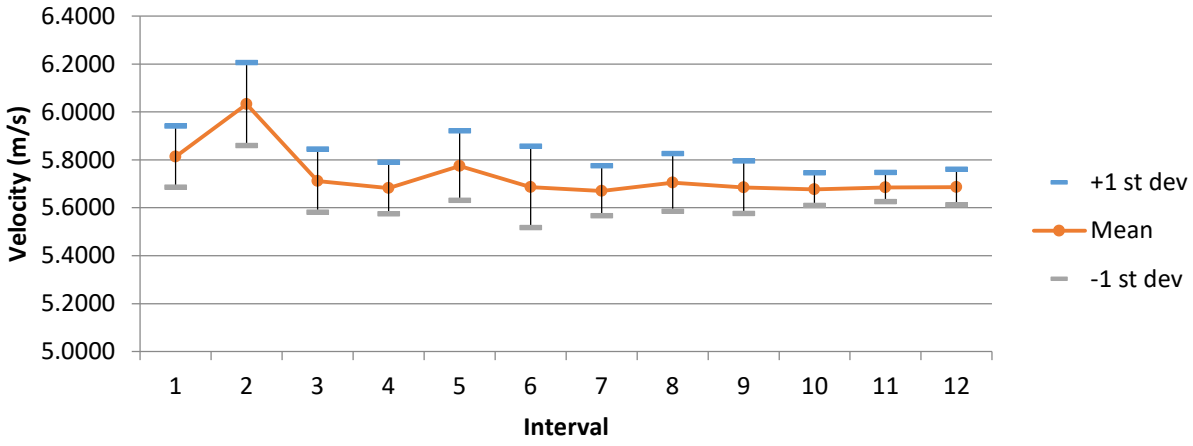
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 300
Blockage Condition: Existing Buildings
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 10:20:53.062

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.1893	12.5103	11.1093	0.2504
u	9.0900	11.7000	10.6215	0.3322
v	-2.3400	3.0700	0.3113	0.6845
w	-5.3500	-0.3340	-3.0609	0.7859

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.6919	10.2854	11.0112	0.1862	1.6909
2	11.7776	10.3035	11.0238	0.1972	1.7885
3	11.9806	10.4352	11.1773	0.1975	1.7669
4	12.1595	10.3004	11.2817	0.2291	2.0307
5	12.5103	10.3179	11.2134	0.3025	2.6976
6	12.0671	10.3927	11.4085	0.1884	1.6518
7	12.1968	10.2293	11.1328	0.2763	2.4823
8	11.5932	10.3695	11.0485	0.1779	1.6102
9	11.6241	10.2704	11.0085	0.1828	1.6602
10	11.7732	10.1893	10.9660	0.2220	2.0247
11	11.6599	10.2643	11.0444	0.1825	1.6526
12	11.8221	10.2617	10.9958	0.1816	1.6512
		Average	11.1093	0.2103	
		St Dev	0.1361	0.0406	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.5995	0.2513	-2.9020	0.2117	0.4083	0.4850	1.9972	3.8522	4.5758
2	10.7515	0.6476	-2.2571	0.2081	0.3823	0.5127	1.9355	3.5553	4.7690
3	10.9729	0.3913	-1.8870	0.1963	0.6622	0.6138	1.7893	6.0353	5.5937
4	10.7290	0.9013	-3.2125	0.3872	0.5151	0.8185	3.6087	4.8013	7.6290
5	10.4279	-0.2033	-4.0240	0.3927	0.6832	0.4853	3.7659	6.5517	4.6543
6	11.0001	0.4741	-2.9122	0.2082	0.4900	0.4466	1.8925	4.4549	4.0595
7	10.5442	-0.3093	-3.4643	0.3229	0.6376	0.4766	3.0622	6.0473	4.5203
8	10.5033	-0.2214	-3.3501	0.2055	0.5935	0.3386	1.9569	5.6504	3.2239
9	10.4634	0.0423	-3.3753	0.2093	0.4485	0.3139	1.9998	4.2868	3.0002
10	10.3215	0.2819	-3.6270	0.2883	0.4848	0.4648	2.7932	4.6970	4.5036
11	10.5048	0.4144	-3.3104	0.2097	0.6093	0.3402	1.9959	5.7999	3.2382
12	10.6404	1.0630	-2.4104	0.2256	0.4978	0.6960	2.1198	4.6782	6.5408

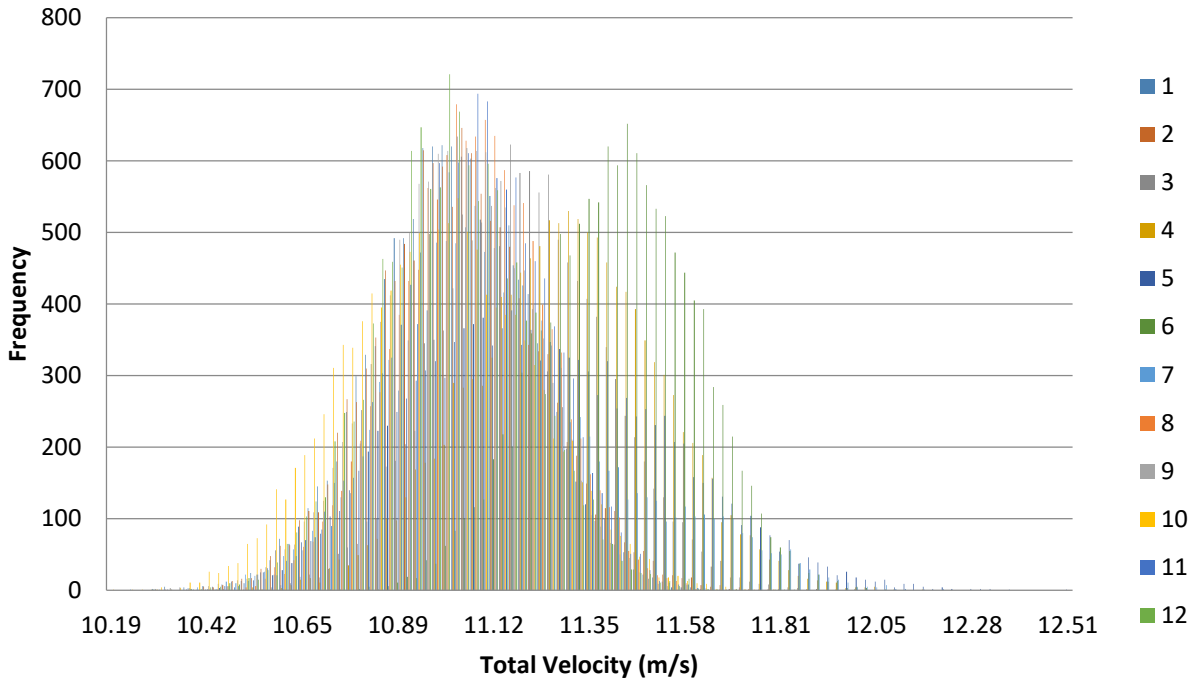


Figure 1. Velocity histogram for each interval (100 bins).

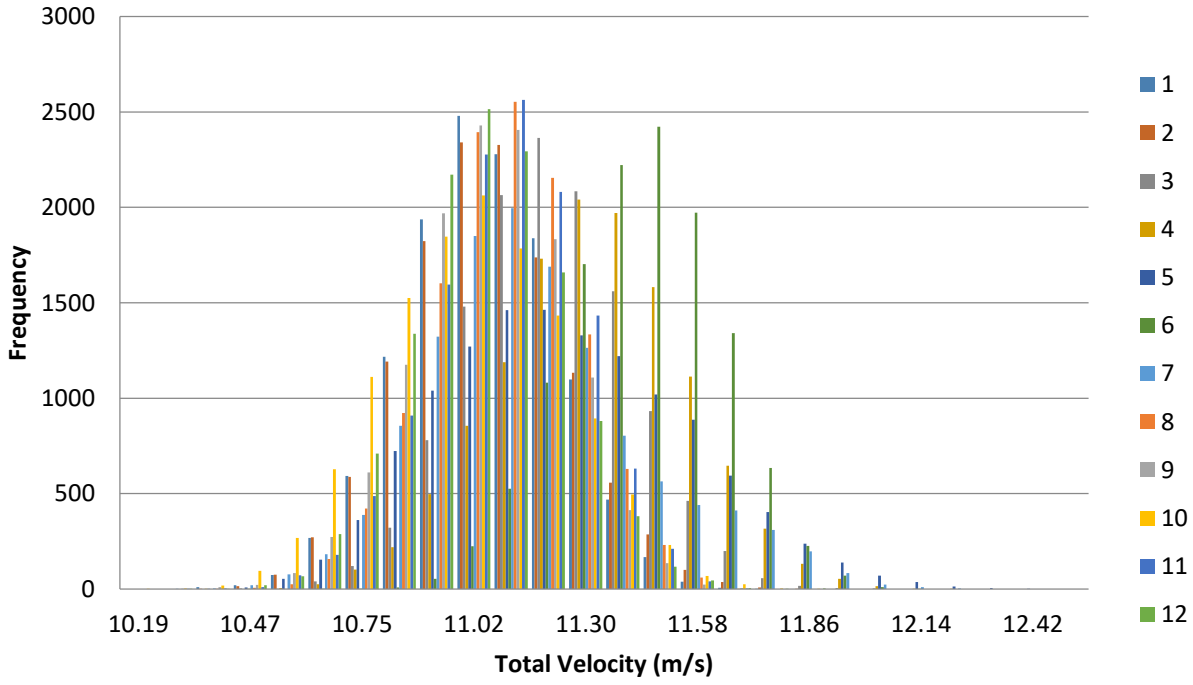
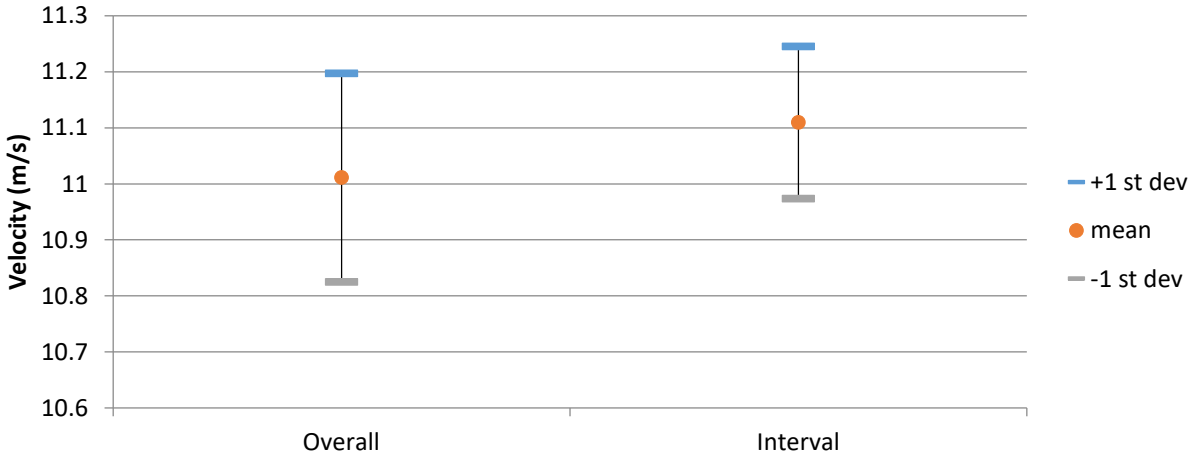
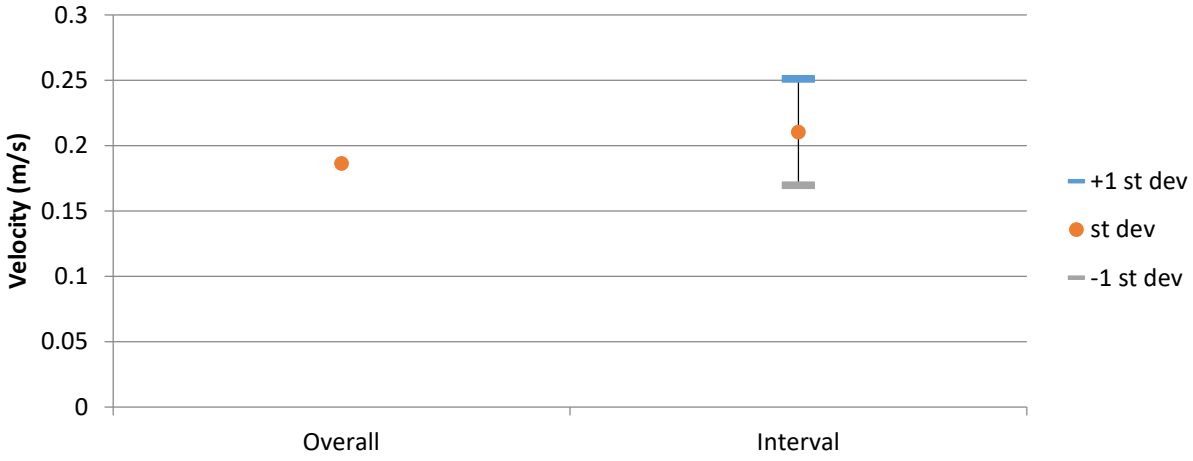


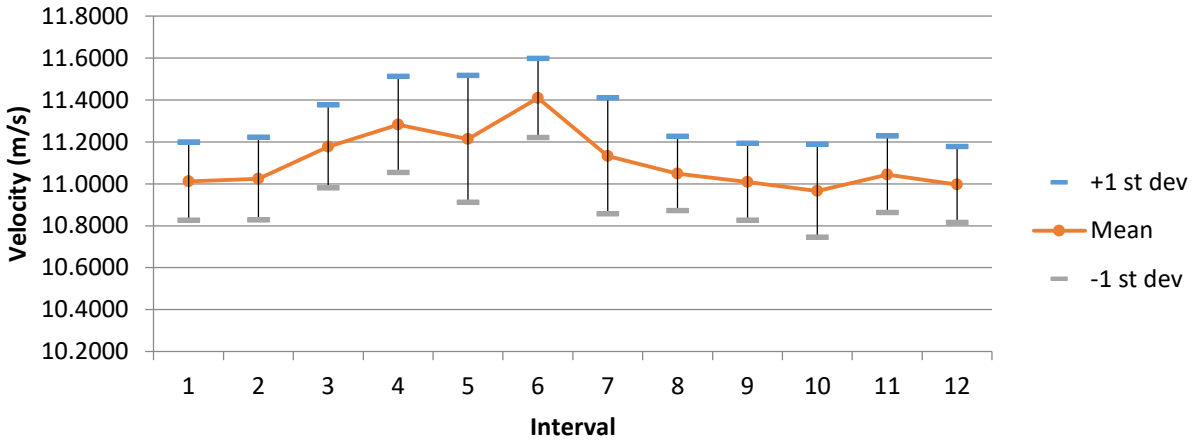
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 301
Blockage Condition: All Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 10:34:41.171

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	4.7943	6.7753	5.6597	0.1071
u	4.5300	6.4600	5.4790	0.1324
v	-1.8600	1.4500	-0.2391	0.4409
w	-3.2200	0.3060	-1.2465	0.4484

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	6.2710	5.0843	5.6561	0.1319	2.3319
2	6.2956	4.7943	5.6431	0.1103	1.9545
3	6.4186	5.1425	5.6799	0.1156	2.0349
4	6.0124	5.2709	5.6244	0.0896	1.5927
5	5.9464	5.2326	5.6336	0.0834	1.4795
6	6.1422	5.2927	5.6638	0.0764	1.3490
7	6.2807	5.3158	5.6534	0.0995	1.7604
8	6.1595	5.0871	5.6672	0.1093	1.9288
9	6.2549	5.1918	5.6739	0.1094	1.9283
10	6.1089	5.0216	5.6621	0.0938	1.6567
11	6.2181	5.0089	5.6521	0.0947	1.6760
12	6.7753	5.1533	5.7067	0.1312	2.2983
		Average	5.6597	0.1038	
		St Dev	0.0218	0.0175	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.4592	0.0424	-1.1949	0.2120	0.6008	0.6084	3.8828	11.0045	11.1453
2	5.4603	-0.4793	-1.2434	0.1093	0.2809	0.4194	2.0013	5.1451	7.6818
3	5.4474	-0.5471	-1.4136	0.1136	0.3182	0.4352	2.0855	5.8417	7.9885
4	5.4992	-0.1227	-1.1178	0.0954	0.2459	0.2583	1.7357	4.4707	4.6965
5	5.4822	-0.2678	-1.2018	0.0874	0.2255	0.3408	1.5948	4.1130	6.2164
6	5.4686	-0.3928	-1.3993	0.0752	0.1687	0.1796	1.3758	3.0843	3.2836
7	5.4401	-0.4833	-1.3450	0.0993	0.4499	0.3473	1.8247	8.2704	6.3834
8	5.4345	-0.1169	-1.4640	0.1629	0.3888	0.5104	2.9983	7.1542	9.3921
9	5.5294	-0.3108	-1.0135	0.1433	0.4051	0.5671	2.5914	7.3258	10.2556
10	5.4877	-0.0074	-1.1994	0.1245	0.4837	0.5156	2.2693	8.8142	9.3954
11	5.4732	-0.2009	-1.3015	0.1035	0.4253	0.2698	1.8909	7.7711	4.9297
12	5.5665	0.0178	-1.0638	0.1383	0.4980	0.4460	2.4839	8.9472	8.0118

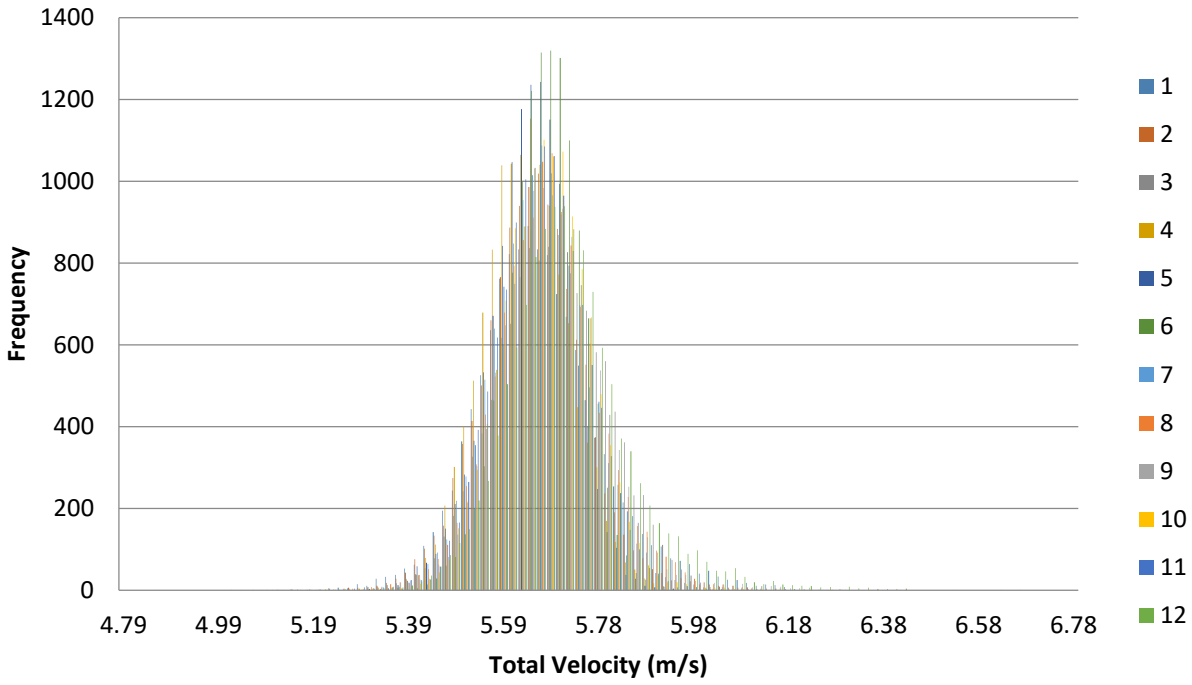


Figure 1. Velocity histogram for each interval (100 bins).

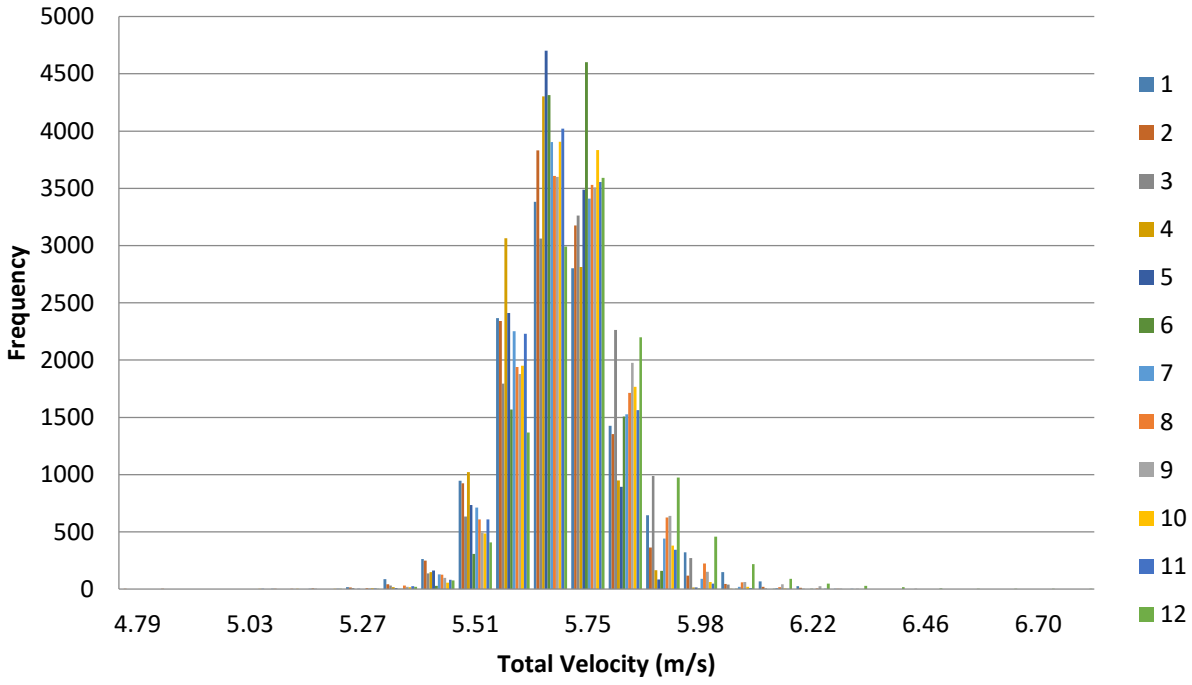
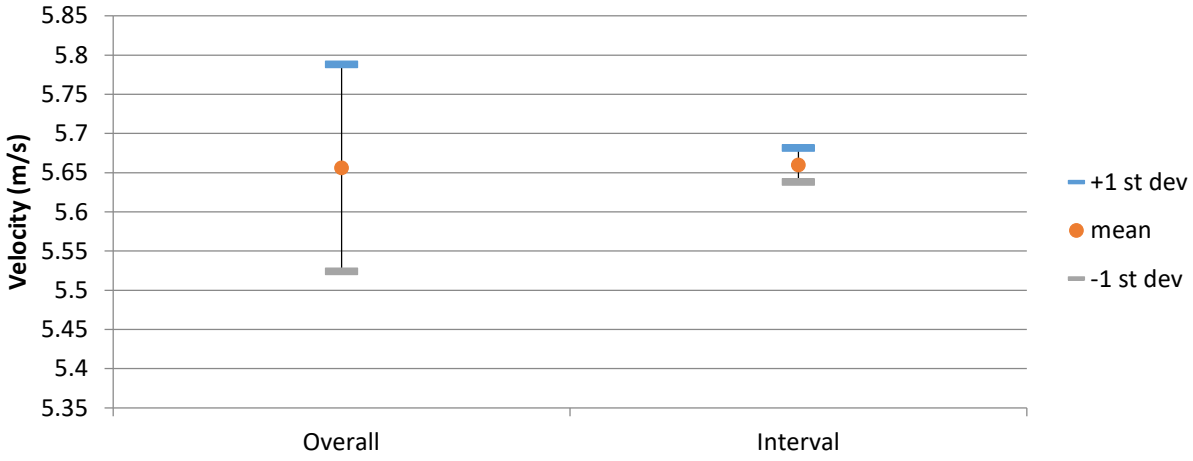
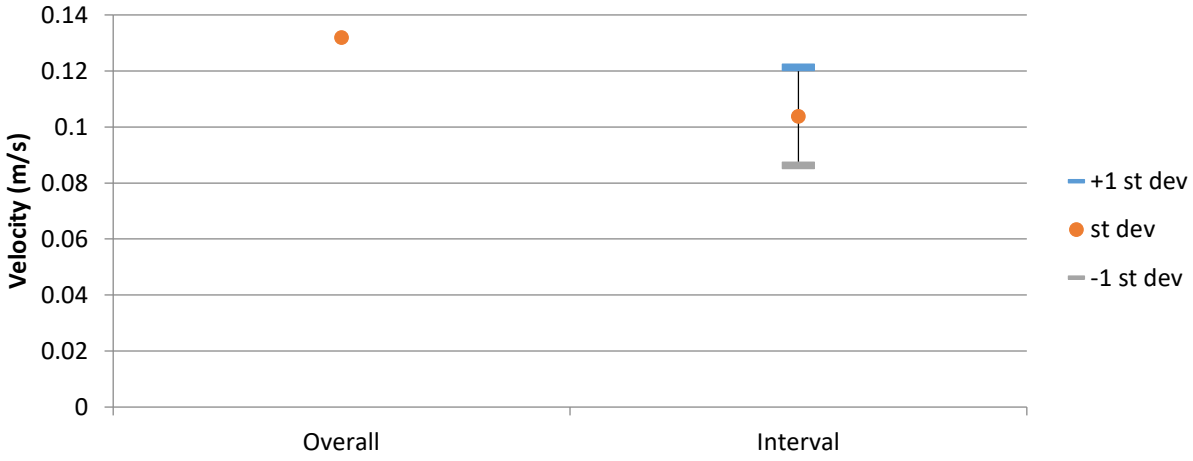


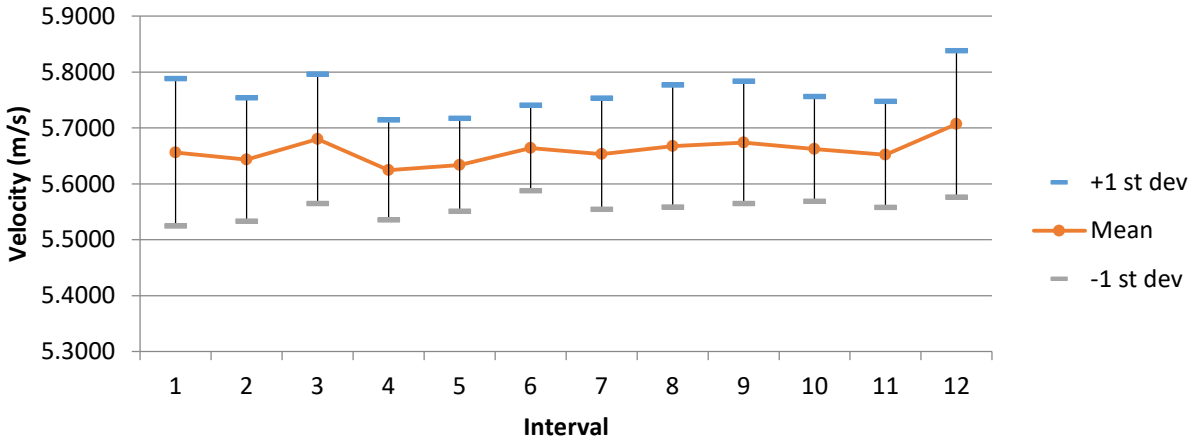
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 302
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 10-Sep-13 First Sample Time: 10:38:14.937

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	9.6014	13.3700	10.9806	0.2682
u	8.5600	12.9000	10.6214	0.3407
v	-5.9800	3.7900	0.2181	1.1072
w	-6.2800	1.5500	-2.3141	1.0421

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.4581	10.2343	10.8750	0.1748	1.6076
2	11.5166	10.1816	10.8959	0.1684	1.5454
3	11.7581	10.2962	11.0300	0.1917	1.7383
4	11.7483	10.1646	10.9642	0.2130	1.9424
5	11.6704	10.1180	10.9373	0.2083	1.9045
6	12.0620	10.1575	10.9415	0.2486	2.2721
7	12.4439	10.1139	11.0654	0.3028	2.7366
8	11.6497	9.9673	10.9063	0.2110	1.9349
9	11.8957	10.0377	10.9422	0.2128	1.9449
10	11.6889	9.6014	10.9553	0.2041	1.8634
11	12.3107	10.0969	10.9978	0.2982	2.7116
12	13.3700	9.9419	11.2549	0.4353	3.8677
		Average	10.9805	0.2391	
		St Dev	0.1022	0.0750	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.5820	0.4409	-2.4345	0.1848	0.2777	0.2915	1.7461	2.6240	2.7546
2	10.6078	0.1879	-2.4432	0.1766	0.3005	0.3151	1.6646	2.8325	2.9703
3	10.5544	0.8816	-2.9723	0.2207	0.6634	0.4490	2.0913	6.2852	4.2544
4	10.6892	0.2044	-2.2364	0.2356	0.5771	0.7537	2.2037	5.3988	7.0511
5	10.7239	-0.2396	-1.9420	0.2049	0.6851	0.5697	1.9103	6.3884	5.3129
6	10.7583	0.4336	-1.7165	0.2280	0.5641	0.7307	2.1190	5.2432	6.7924
7	10.7867	-0.8789	-1.8113	0.2687	0.9483	1.0760	2.4913	8.7917	9.9749
8	10.7238	0.7776	-1.4219	0.2219	0.9787	0.5979	2.0691	9.1267	5.5759
9	10.6473	0.7741	-2.1854	0.2593	0.4896	0.8544	2.4353	4.5986	8.0248
10	10.2544	1.1351	-3.4773	0.4367	0.6900	0.9284	4.2583	6.7292	9.0535
11	10.2907	0.1158	-3.5753	0.4585	1.1269	0.9299	4.4558	10.9510	9.0362
12	10.8384	-1.2092	-1.5530	0.4123	1.9116	1.3016	3.8043	17.6375	12.0088

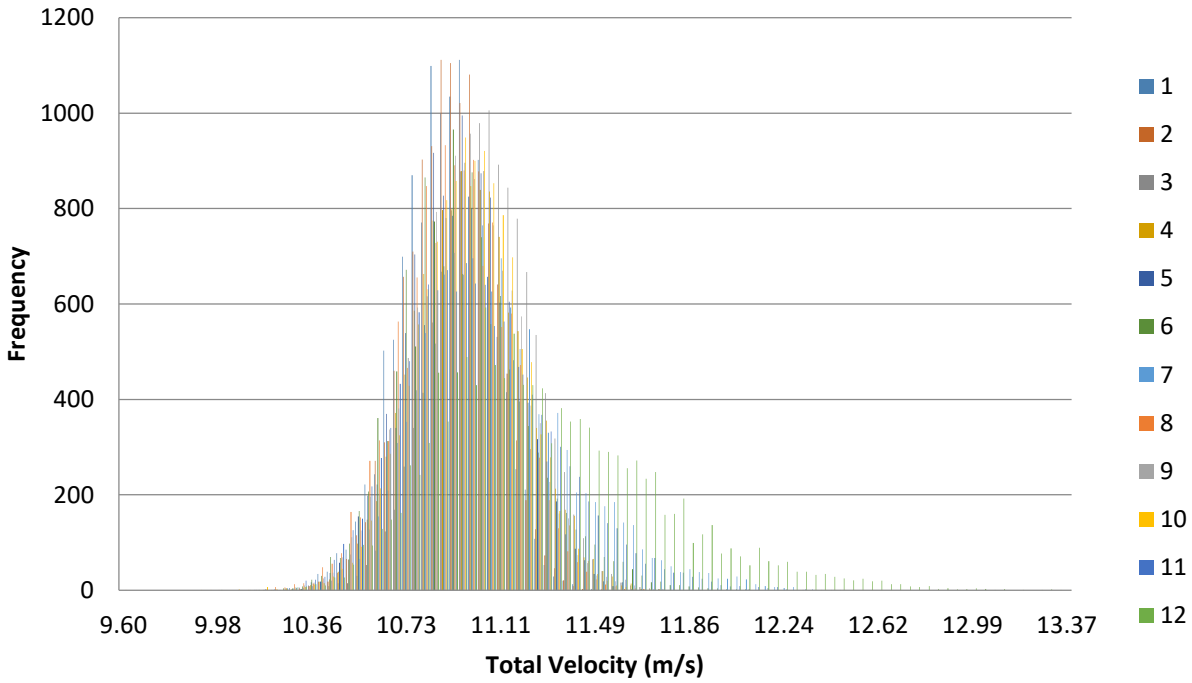


Figure 1. Velocity histogram for each interval (100 bins).

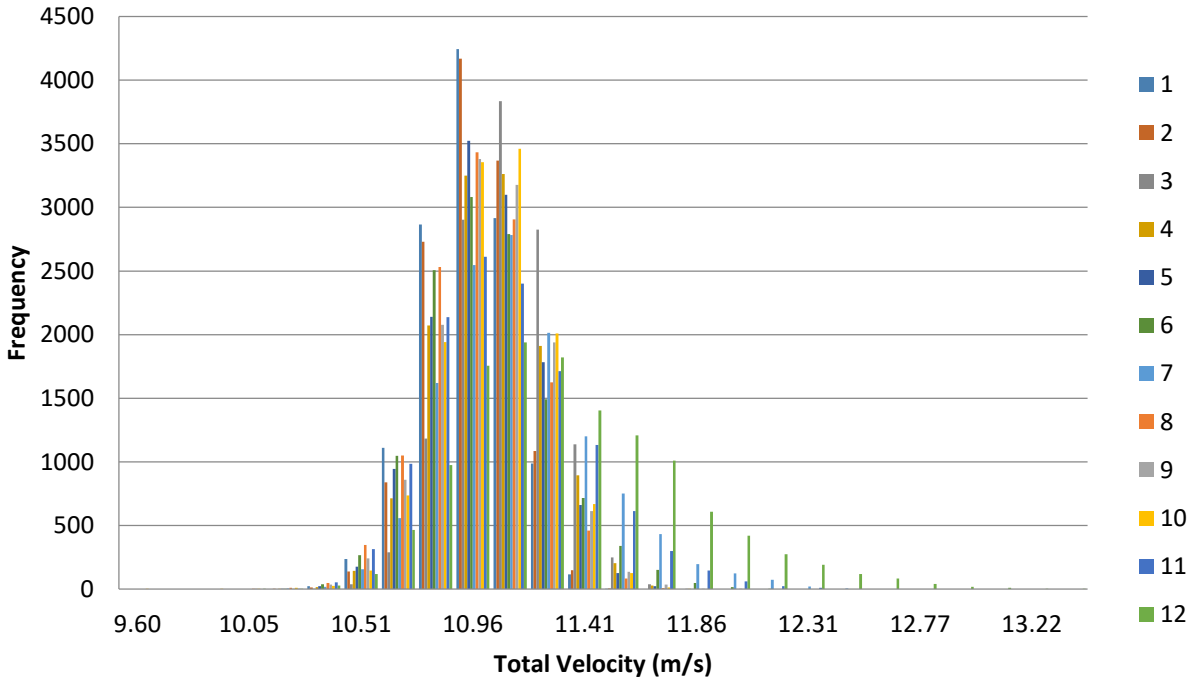
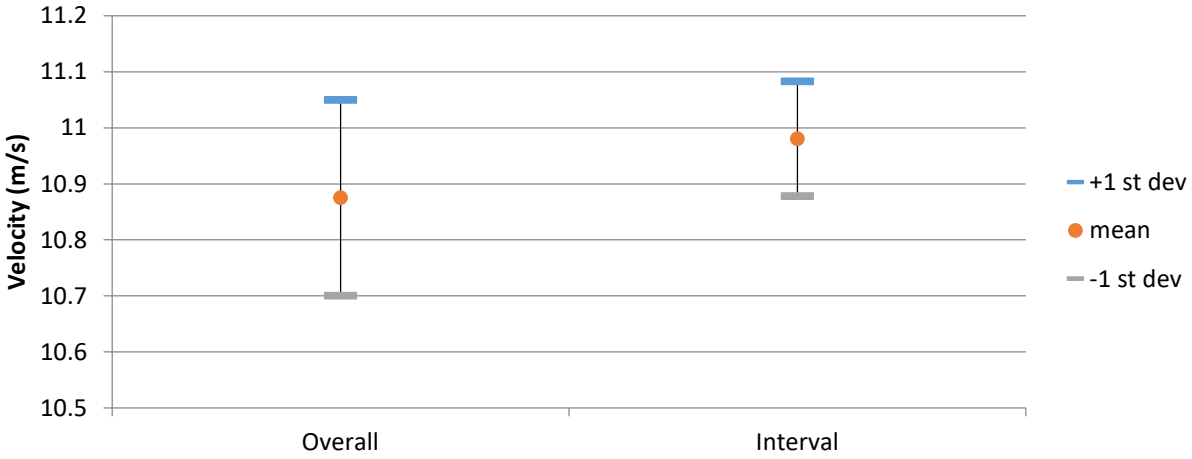
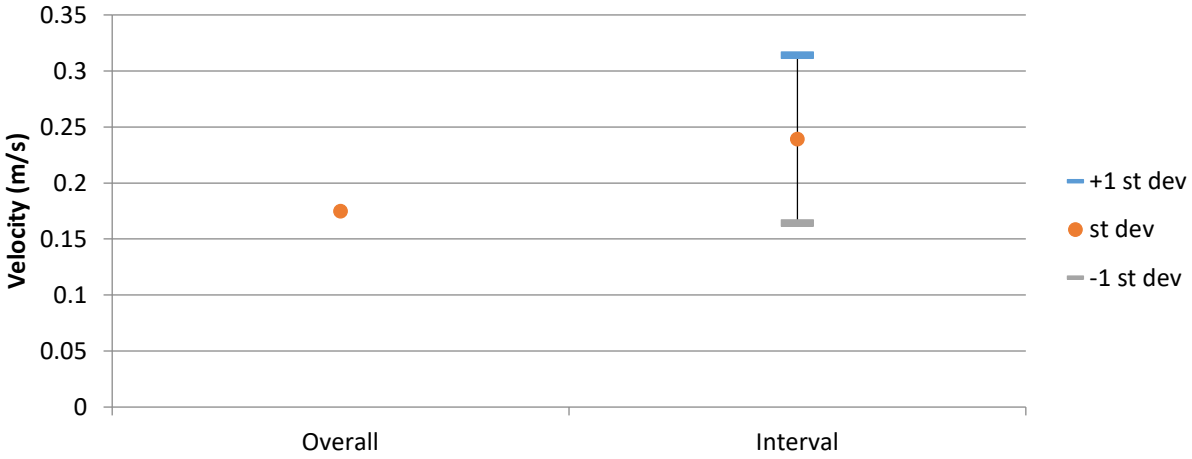


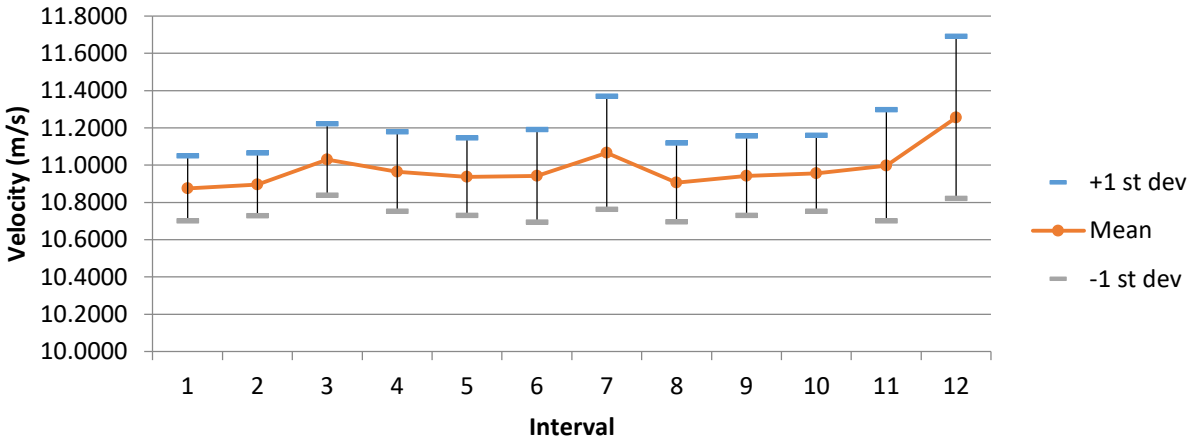
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 303
Blockage Condition: All Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 11-Sep-13 First Sample Time: 07:22:08.468

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.3618	5.9962	5.6811	0.0749
u	5.1300	5.9400	5.5461	0.0875
v	-0.8650	0.5550	-0.0381	0.2070
w	-2.0100	-0.1550	-1.1883	0.2408

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.8933	5.3698	5.6570	0.0694	1.2269
2	5.8858	5.3817	5.6506	0.0676	1.1959
3	5.9388	5.4183	5.6747	0.0709	1.2486
4	5.9448	5.3887	5.6572	0.0740	1.3074
5	5.9753	5.4146	5.6881	0.0772	1.3567
6	5.9563	5.3715	5.6682	0.0752	1.3267
7	5.9962	5.3859	5.6931	0.0815	1.4307
8	5.9795	5.3618	5.6619	0.0741	1.3082
9	5.9222	5.3987	5.6942	0.0690	1.2112
10	5.9687	5.4447	5.7107	0.0676	1.1836
11	5.9246	5.4376	5.6970	0.0665	1.1672
12	5.9748	5.4495	5.7211	0.0654	1.1426
		Average	5.6811	0.0715	
		St Dev	0.0229	0.0049	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.5215	-0.1353	-1.2192	0.0731	0.0732	0.0655	1.3237	1.3257	1.1870
2	5.4961	-0.2176	-1.2846	0.0737	0.0819	0.1284	1.3412	1.4907	2.3367
3	5.5311	-0.0284	-1.2599	0.0730	0.0946	0.1089	1.3207	1.7103	1.9691
4	5.5464	-0.0062	-1.1049	0.0762	0.0907	0.1090	1.3731	1.6352	1.9644
5	5.6067	-0.0171	-0.8778	0.0986	0.1836	0.3341	1.7582	3.2751	5.9583
6	5.5510	-0.0746	-1.1281	0.0768	0.1293	0.1416	1.3833	2.3291	2.5506
7	5.6226	-0.0548	-0.8757	0.0901	0.1146	0.1137	1.6032	2.0375	2.0223
8	5.5301	-0.3864	-1.1159	0.0904	0.1729	0.2194	1.6351	3.1260	3.9682
9	5.5261	-0.1041	-1.3485	0.0760	0.1566	0.1778	1.3750	2.8344	3.2169
10	5.5262	0.1131	-1.4129	0.0869	0.1117	0.2200	1.5721	2.0219	3.9819
11	5.5571	0.2736	-1.2179	0.0730	0.0748	0.0964	1.3132	1.3457	1.7345
12	5.5381	0.1803	-1.4139	0.0728	0.1039	0.1271	1.3141	1.8765	2.2951

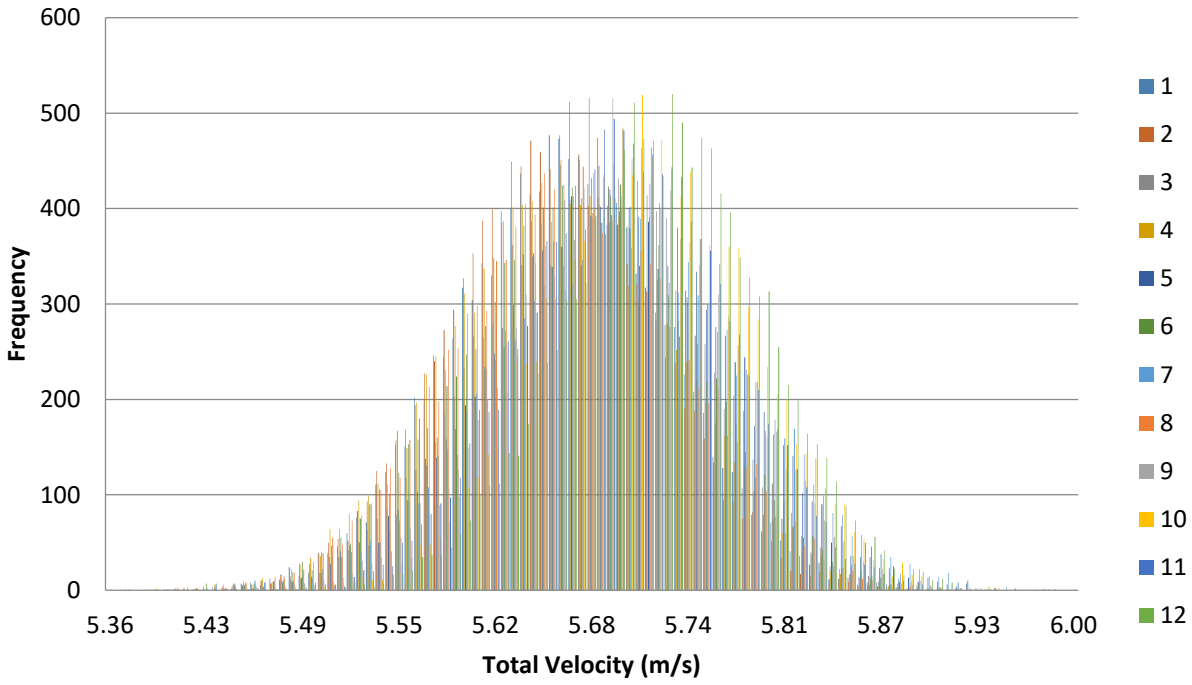


Figure 1. Velocity histogram for each interval (100 bins).

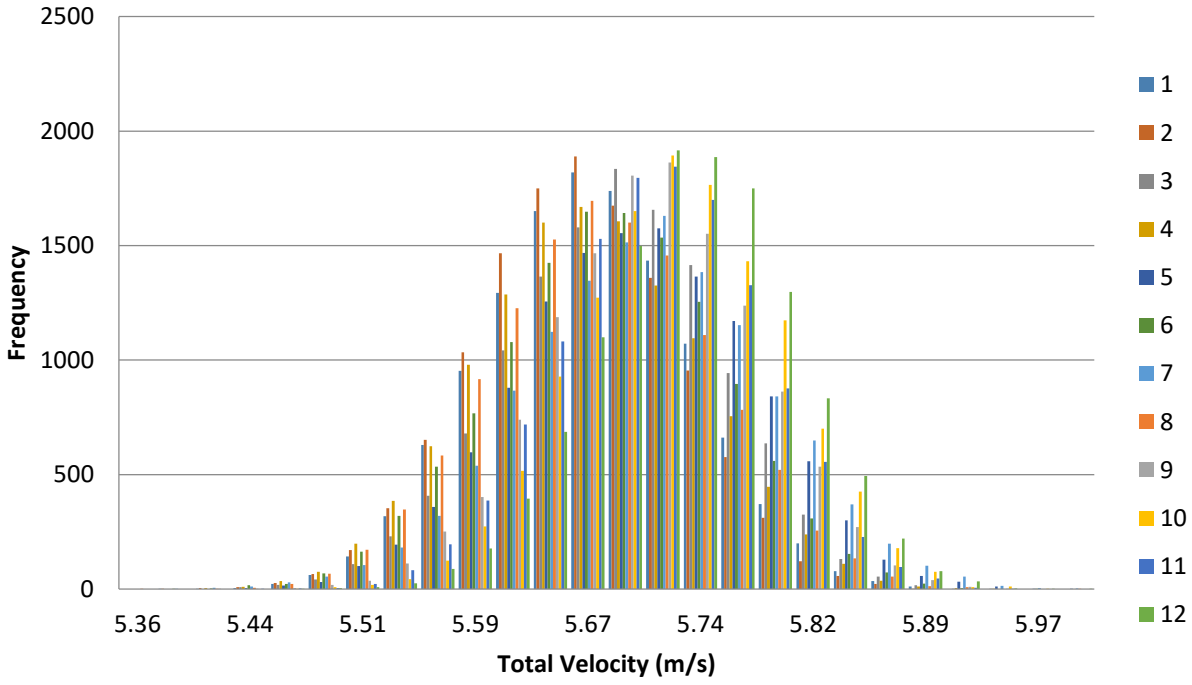
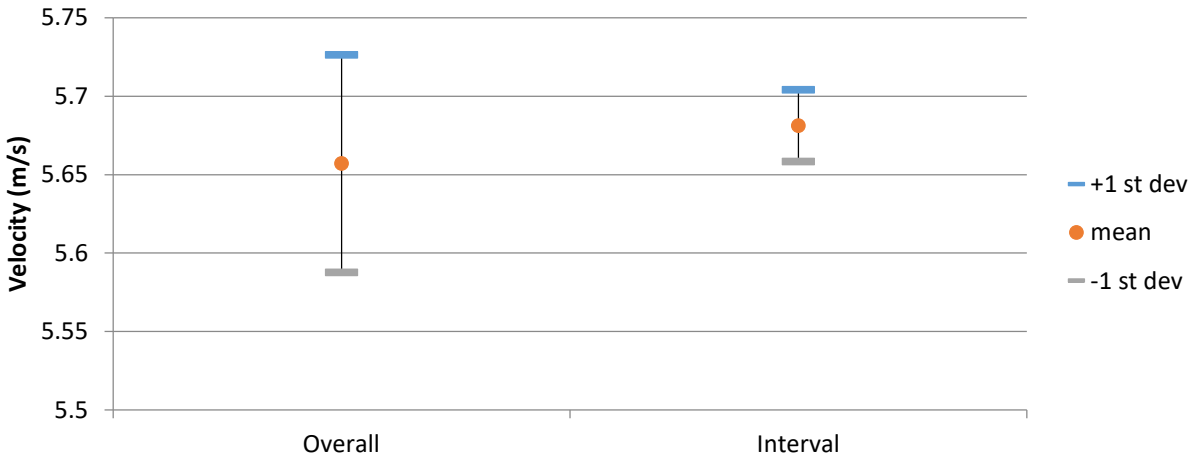
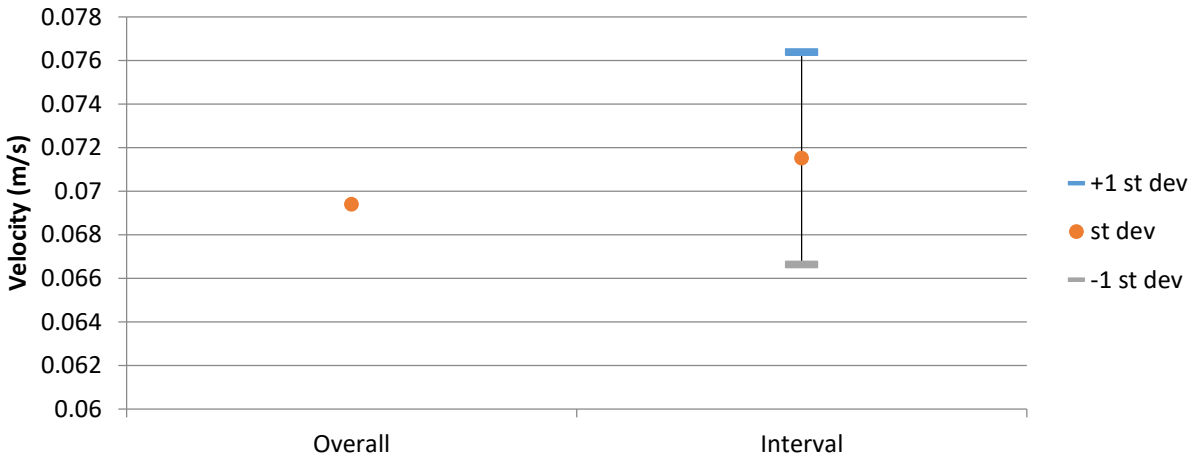


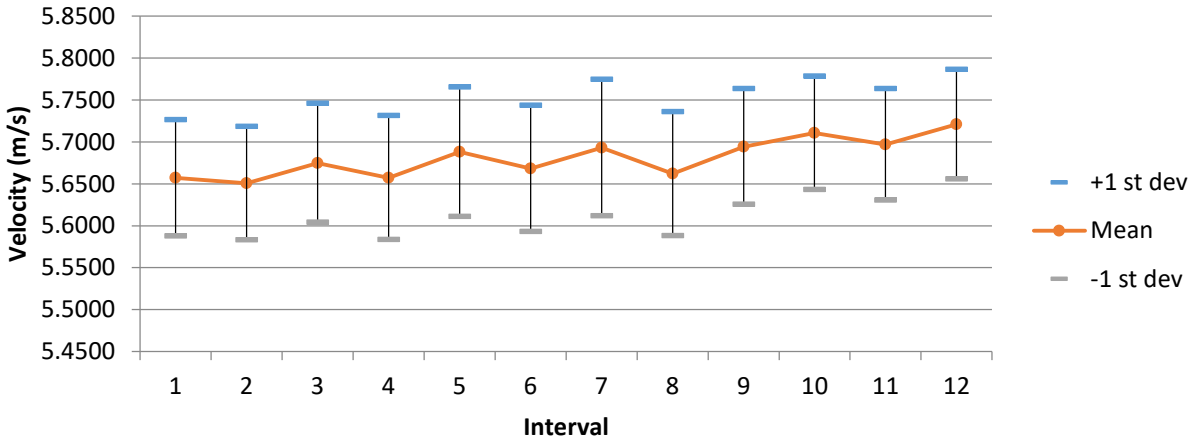
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 304
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 11-Sep-13 First Sample Time: 07:27:01.296

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.0591	11.5114	10.8858	0.1598
u	9.8100	11.3000	10.6301	0.1650
v	-1.3200	1.0400	-0.1965	0.3102
w	-3.2900	-1.5800	-2.3065	0.2126

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.4800	10.2659	10.9079	0.1605	1.4717
2	11.4614	10.2174	10.8557	0.1600	1.4739
3	11.4694	10.2772	10.8885	0.1623	1.4906
4	11.5073	10.2080	10.8929	0.1571	1.4421
5	11.4791	10.2480	10.8707	0.1624	1.4941
6	11.5114	10.2394	10.8576	0.1639	1.5092
7	11.4295	10.0591	10.8356	0.1606	1.4819
8	11.4570	10.2739	10.8812	0.1536	1.4116
9	11.4773	10.4089	10.9345	0.1476	1.3497
10	11.5035	10.3186	10.9363	0.1532	1.4008
11	11.4736	10.3211	10.8912	0.1491	1.3687
12	11.4176	10.2294	10.8778	0.1552	1.4270
		Average	10.8858	0.1571	
		St Dev	0.0302	0.0054	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.6455	-0.3125	-2.3213	0.1674	0.3314	0.2369	1.5727	3.1126	2.2254
2	10.5975	-0.6451	-2.2467	0.1638	0.2059	0.1758	1.5455	1.9428	1.6587
3	10.6539	-0.4094	-2.1716	0.1769	0.2986	0.2736	1.6604	2.8028	2.5679
4	10.6339	-0.3946	-2.3111	0.1611	0.1902	0.2016	1.5154	1.7884	1.8955
5	10.6376	-0.3559	-2.2013	0.1684	0.1554	0.1221	1.5830	1.4604	1.1477
6	10.6266	-0.2587	-2.1985	0.1698	0.2066	0.1291	1.5978	1.9443	1.2149
7	10.6105	-0.1990	-2.1765	0.1665	0.1790	0.1251	1.5695	1.6866	1.1793
8	10.6244	-0.0121	-2.3384	0.1597	0.1593	0.1619	1.5030	1.4991	1.5237
9	10.6292	0.0247	-2.5560	0.1563	0.1586	0.1490	1.4707	1.4919	1.4017
10	10.6391	0.0850	-2.5181	0.1609	0.1823	0.1670	1.5123	1.7139	1.5693
11	10.6292	0.1227	-2.3604	0.1575	0.1669	0.1451	1.4818	1.5701	1.3653
12	10.6338	-0.0027	-2.2778	0.1629	0.1920	0.1477	1.5315	1.8057	1.3893

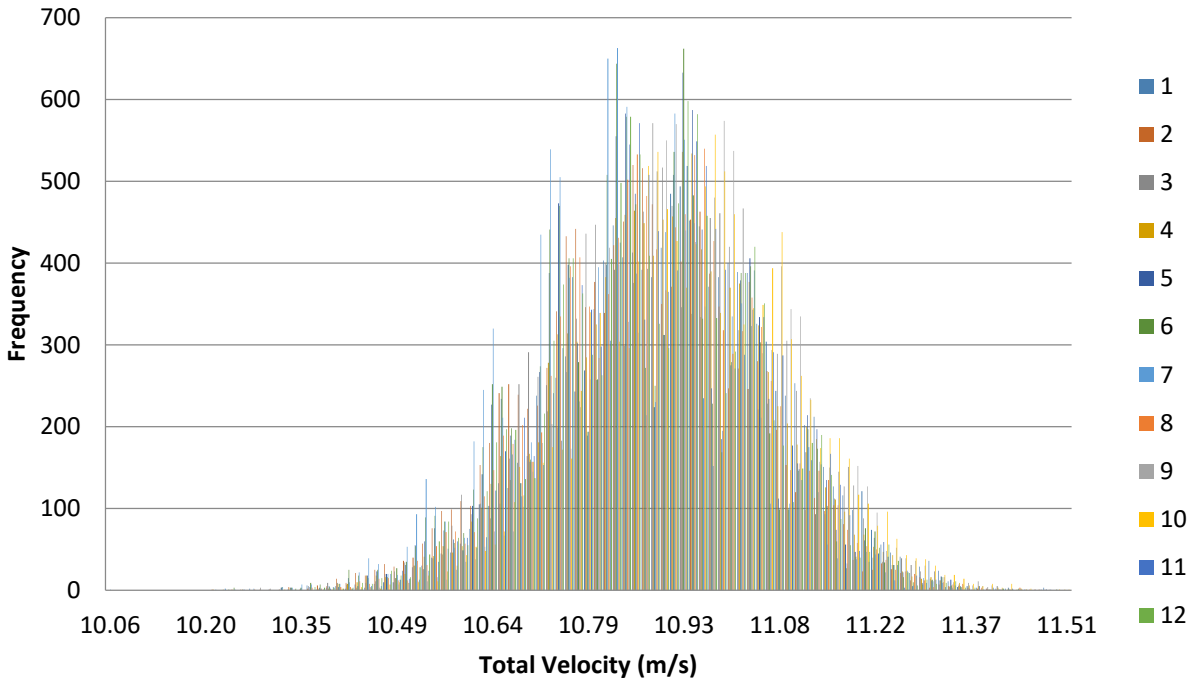


Figure 1. Velocity histogram for each interval (100 bins).

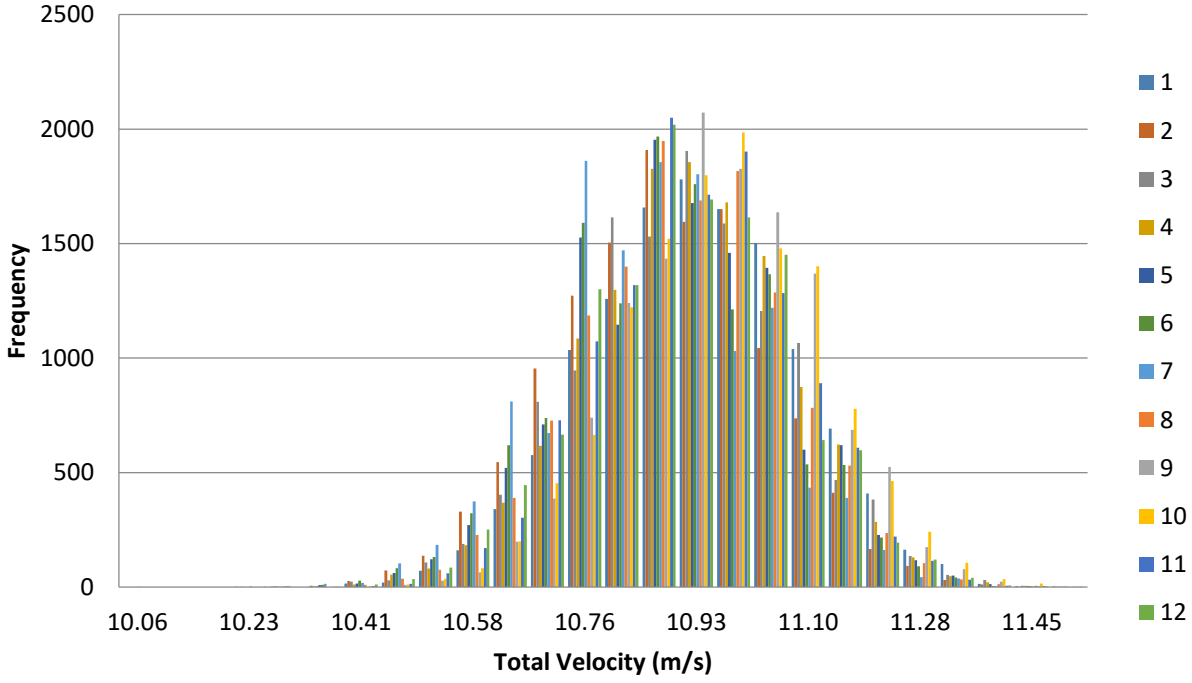
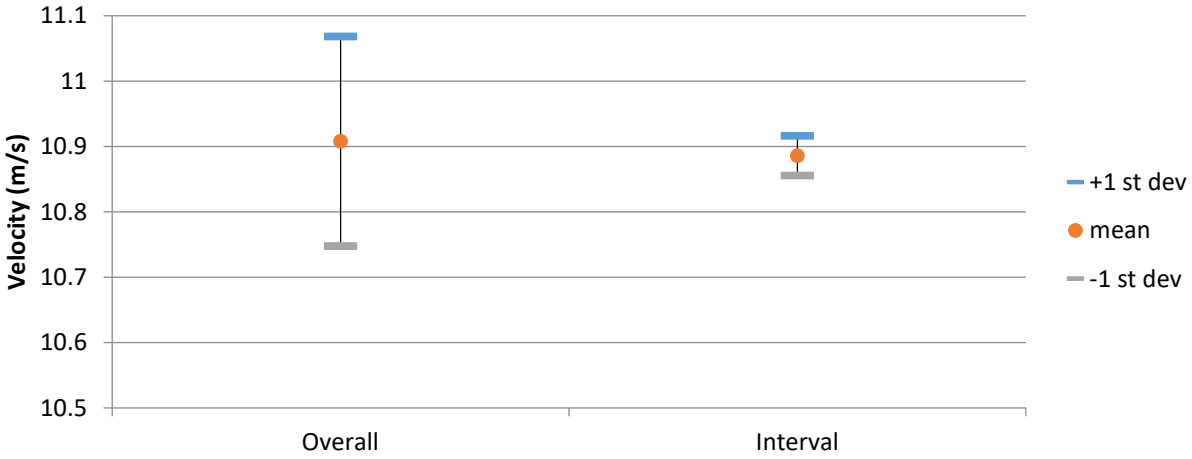
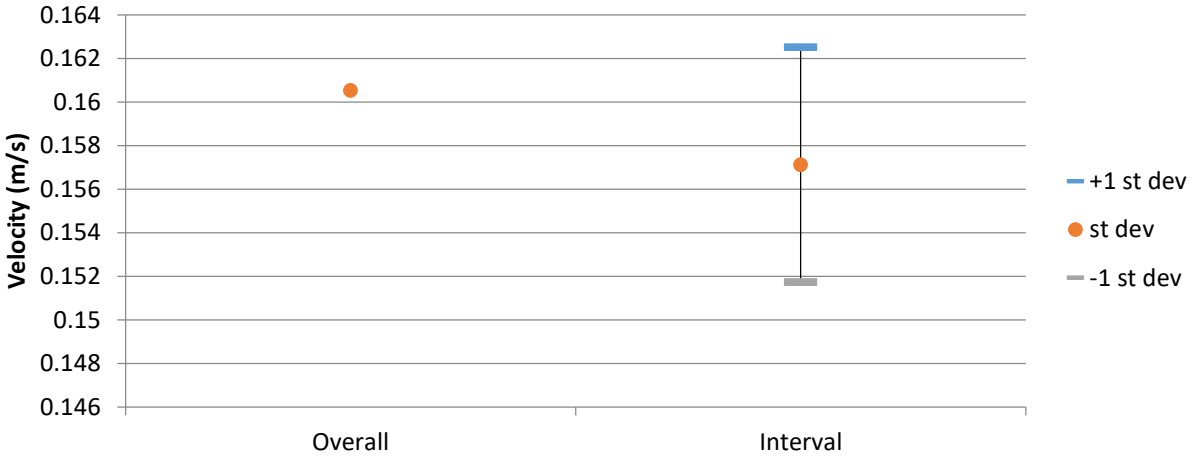


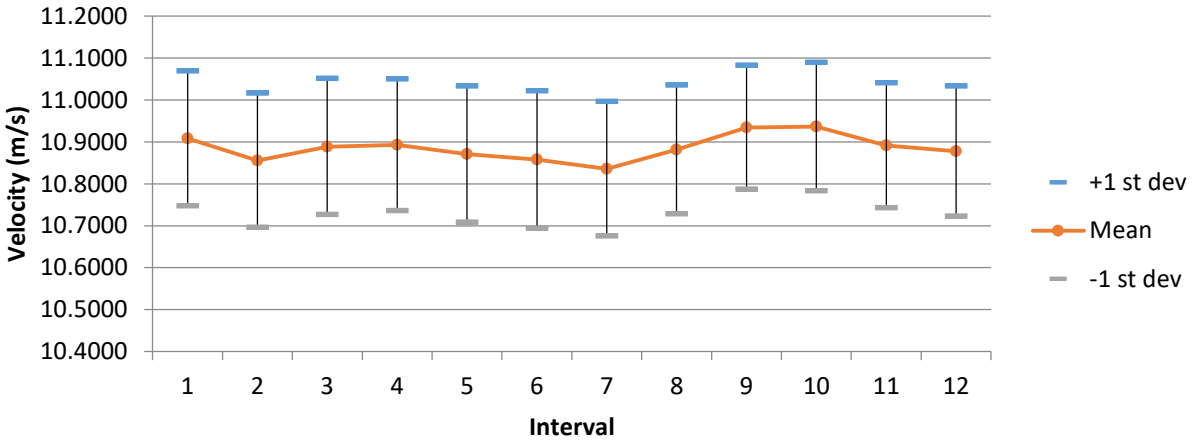
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 305
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 11-Sep-13 First Sample Time: 07:39:30.593

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.2292	11.6058	10.9280	0.1636
u	9.8800	11.4000	10.6434	0.1690
v	-0.7650	1.1400	0.0375	0.2161
w	-3.8100	-1.6400	-2.4511	0.2879

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.6058	10.3155	10.8824	0.1605	1.4750
2	11.4576	10.2292	10.8776	0.1644	1.5116
3	11.5427	10.2667	10.9234	0.1627	1.4894
4	11.4802	10.3158	10.9403	0.1544	1.4117
5	11.4816	10.2636	10.9104	0.1578	1.4465
6	11.5830	10.2890	10.8958	0.1691	1.5524
7	11.5394	10.3016	10.9226	0.1596	1.4608
8	11.5353	10.3726	10.9754	0.1562	1.4231
9	11.4569	10.3441	10.9207	0.1560	1.4284
10	11.5606	10.4109	10.9886	0.1521	1.3841
11	11.5261	10.3120	10.9096	0.1640	1.5030
12	11.5120	10.3325	10.9895	0.1559	1.4188
		Average	10.9280	0.1594	
		St Dev	0.0384	0.0049	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.6462	-0.1228	-2.2434	0.1678	0.1418	0.1255	1.5765	1.3320	1.1792
2	10.6533	0.0381	-2.1883	0.1737	0.1497	0.1157	1.6301	1.4053	1.0857
3	10.6513	0.0002	-2.4030	0.1696	0.1771	0.2494	1.5927	1.6630	2.3413
4	10.6478	0.0764	-2.4996	0.1630	0.1711	0.1728	1.5304	1.6072	1.6232
5	10.6583	0.1328	-2.3130	0.1672	0.1953	0.1686	1.5690	1.8324	1.5817
6	10.6889	0.1336	-2.0944	0.1797	0.1898	0.1456	1.6811	1.7761	1.3618
7	10.6586	0.1180	-2.3706	0.1699	0.1853	0.1627	1.5938	1.7386	1.5266
8	10.6280	0.1887	-2.7136	0.1689	0.2523	0.1924	1.5895	2.3739	1.8105
9	10.6158	-0.1414	-2.5440	0.1644	0.2050	0.1682	1.5486	1.9307	1.5848
10	10.6245	0.0121	-2.7905	0.1627	0.2069	0.1883	1.5315	1.9475	1.7719
11	10.6186	-0.0748	-2.4815	0.1652	0.1862	0.2593	1.5558	1.7536	2.4417
12	10.6292	0.0890	-2.7706	0.1605	0.2032	0.2530	1.5099	1.9117	2.3800

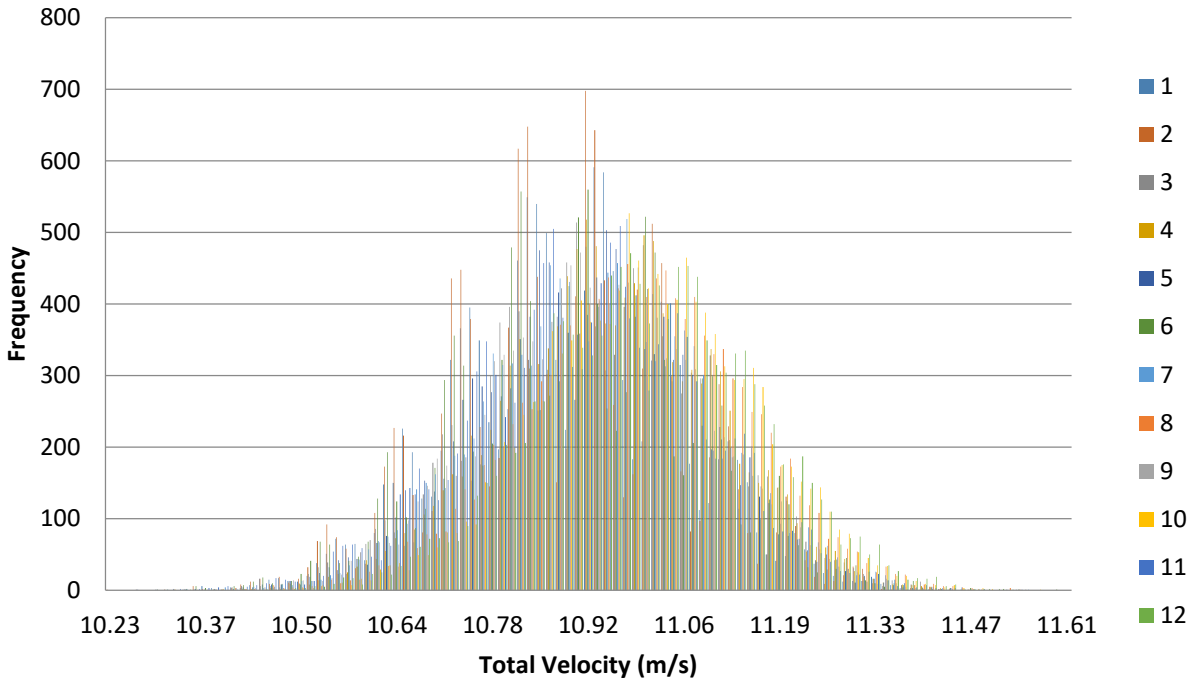


Figure 1. Velocity histogram for each interval (100 bins).

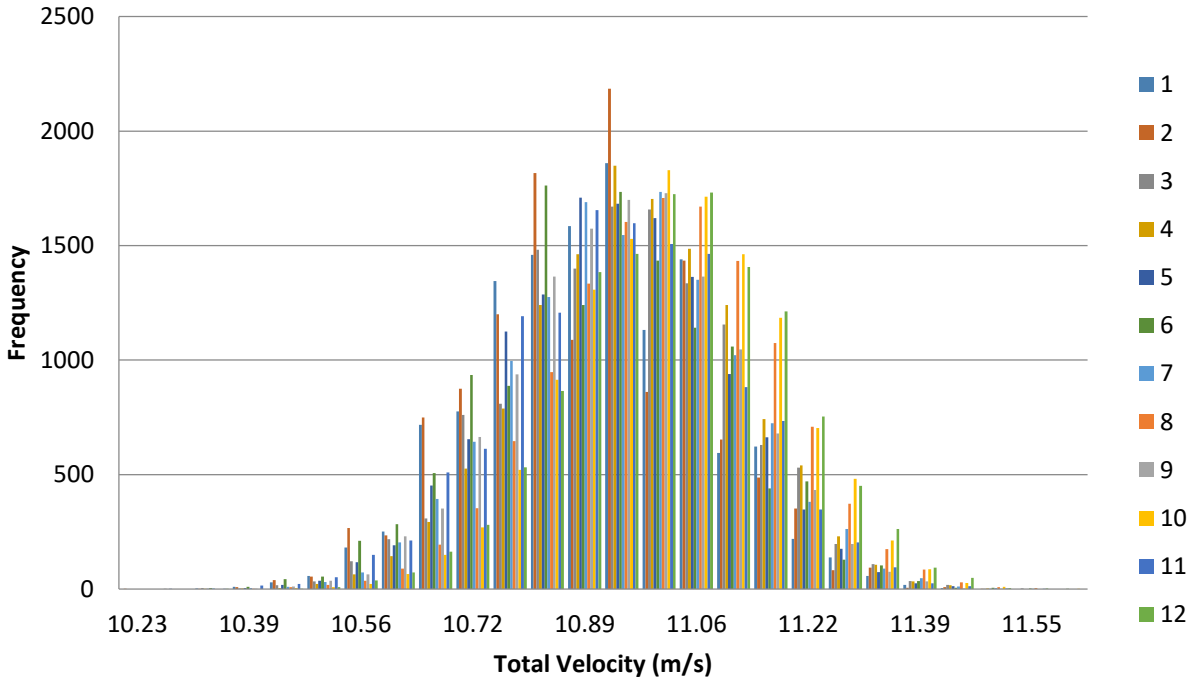
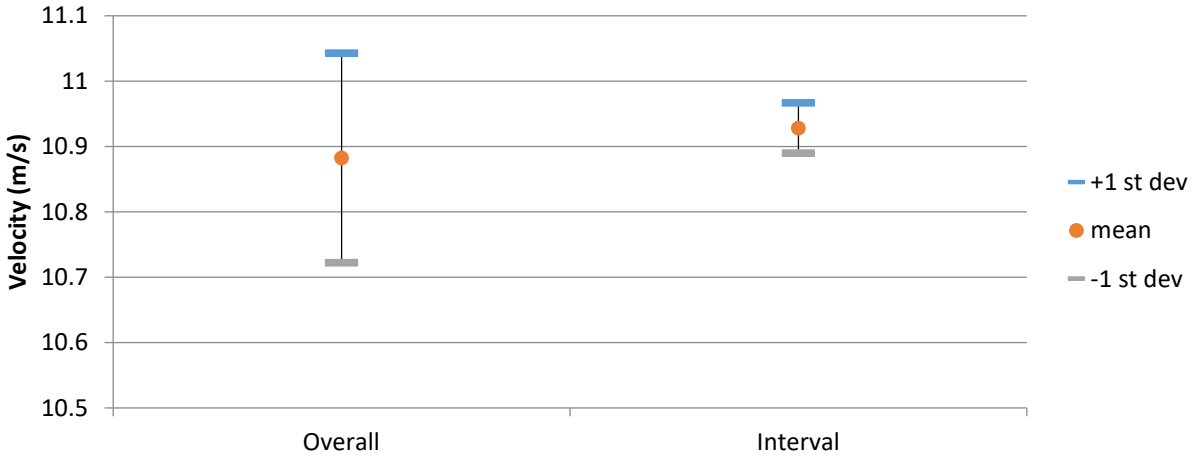
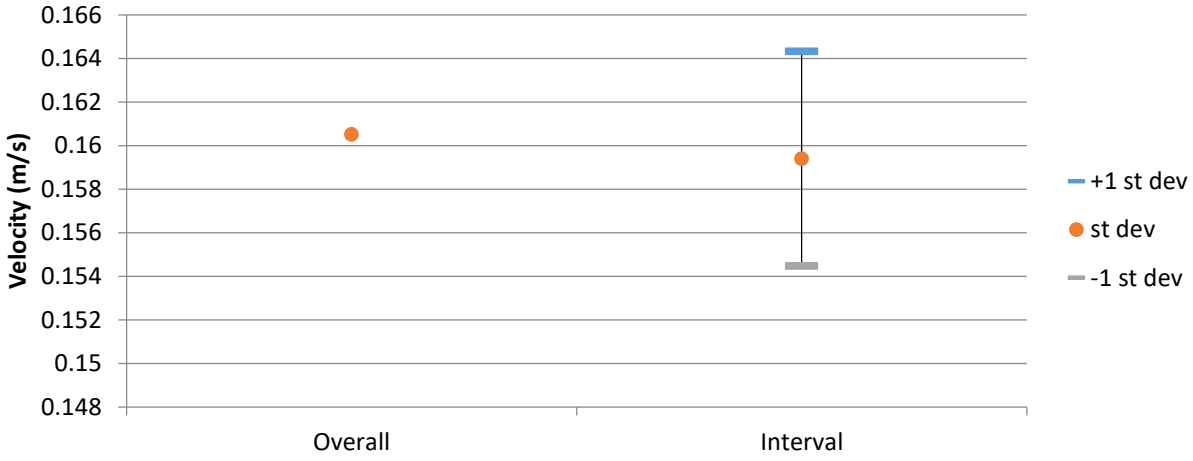


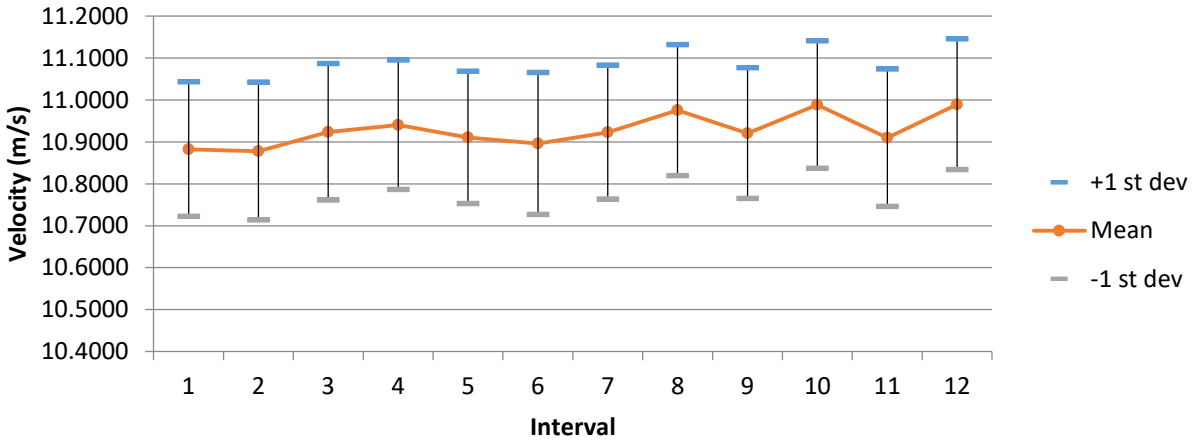
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 306
Blockage Condition: Existing Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 11-Sep-13 First Sample Time: 07:46:24.828

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.3034	5.9093	5.6041	0.0700
u	5.1400	5.8100	5.4779	0.0762
v	-0.4510	0.5090	0.0102	0.1247
w	-1.6800	-0.6350	-1.1702	0.1077

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.8522	5.3581	5.6094	0.0658	1.1737
2	5.8502	5.3547	5.6153	0.0694	1.2357
3	5.8766	5.3313	5.6014	0.0699	1.2476
4	5.8948	5.3233	5.6021	0.0709	1.2656
5	5.9093	5.3305	5.5986	0.0677	1.2101
6	5.8556	5.3138	5.6022	0.0715	1.2757
7	5.8520	5.3327	5.6062	0.0670	1.1944
8	5.8822	5.3324	5.6002	0.0671	1.1988
9	5.8484	5.3595	5.5950	0.0688	1.2305
10	5.8554	5.3588	5.5996	0.0709	1.2661
11	5.8779	5.3272	5.6092	0.0752	1.3407
12	5.8821	5.3034	5.6094	0.0727	1.2952
		Average	5.6041	0.0697	
		St Dev	0.0058	0.0027	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.4586	0.1387	-1.2793	0.0708	0.0709	0.0842	1.2967	1.2994	1.5433
2	5.4606	0.1860	-1.2821	0.0756	0.1387	0.1217	1.3842	2.5403	2.2278
3	5.4740	-0.0386	-1.1827	0.0747	0.0808	0.0634	1.3642	1.4764	1.1586
4	5.4821	-0.0899	-1.1431	0.0756	0.0993	0.0739	1.3797	1.8115	1.3488
5	5.4766	-0.0550	-1.1577	0.0723	0.0685	0.0522	1.3201	1.2511	0.9538
6	5.4833	0.0081	-1.1427	0.0766	0.0851	0.0607	1.3968	1.5516	1.1069
7	5.4782	0.1038	-1.1811	0.0735	0.0821	0.0718	1.3423	1.4985	1.3113
8	5.4745	0.0217	-1.1756	0.0718	0.0691	0.0627	1.3122	1.2630	1.1451
9	5.4773	-0.0114	-1.1351	0.0741	0.0815	0.0870	1.3531	1.4880	1.5882
10	5.4703	-0.0505	-1.1877	0.0770	0.0821	0.1030	1.4084	1.5001	1.8834
11	5.5065	-0.1073	-1.0505	0.0815	0.0848	0.1336	1.4806	1.5403	2.4259
12	5.4931	0.0161	-1.1254	0.0777	0.1043	0.1100	1.4147	1.8986	2.0022

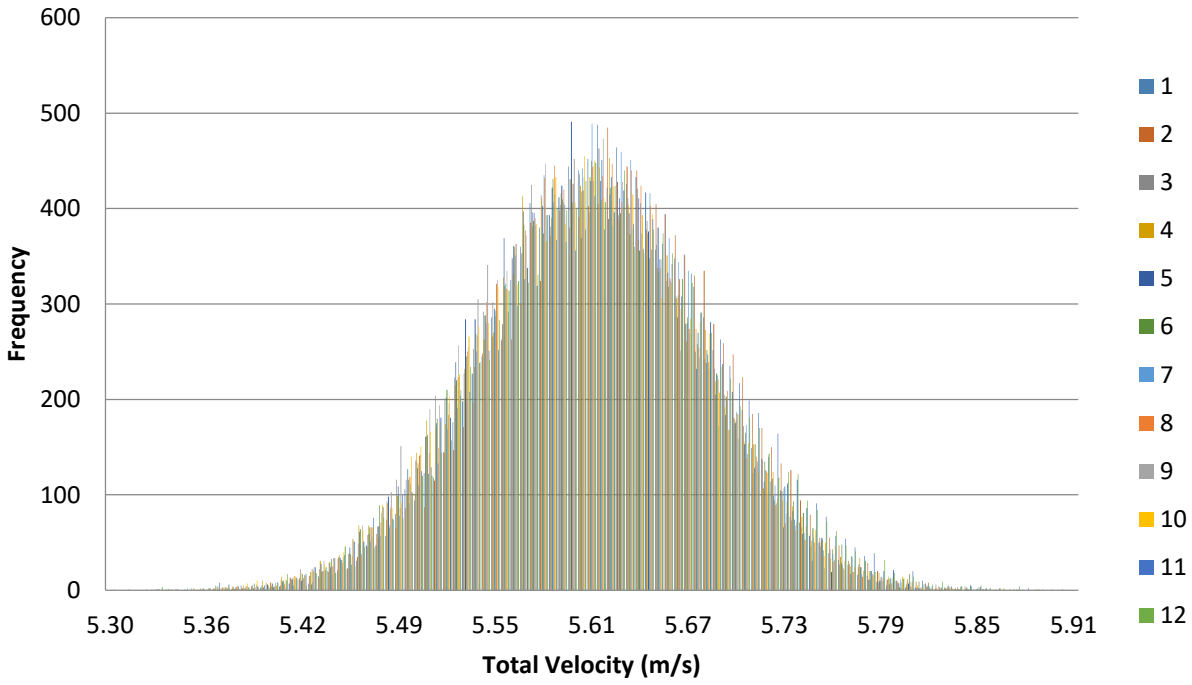


Figure 1. Velocity histogram for each interval (100 bins).

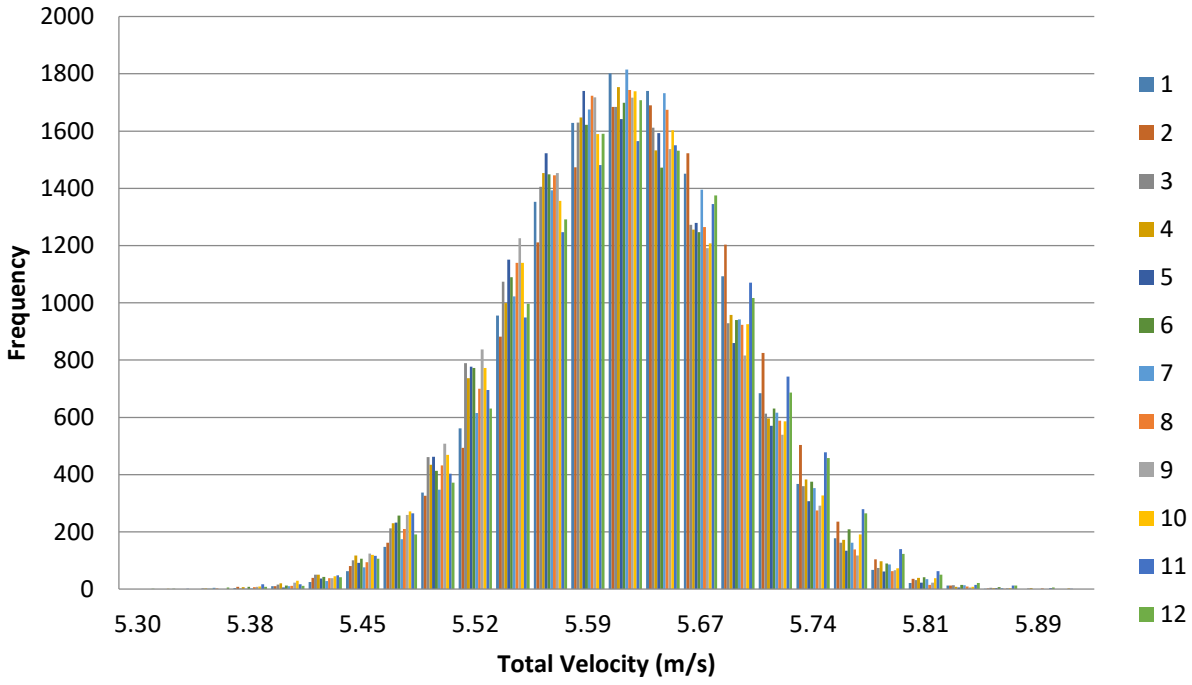
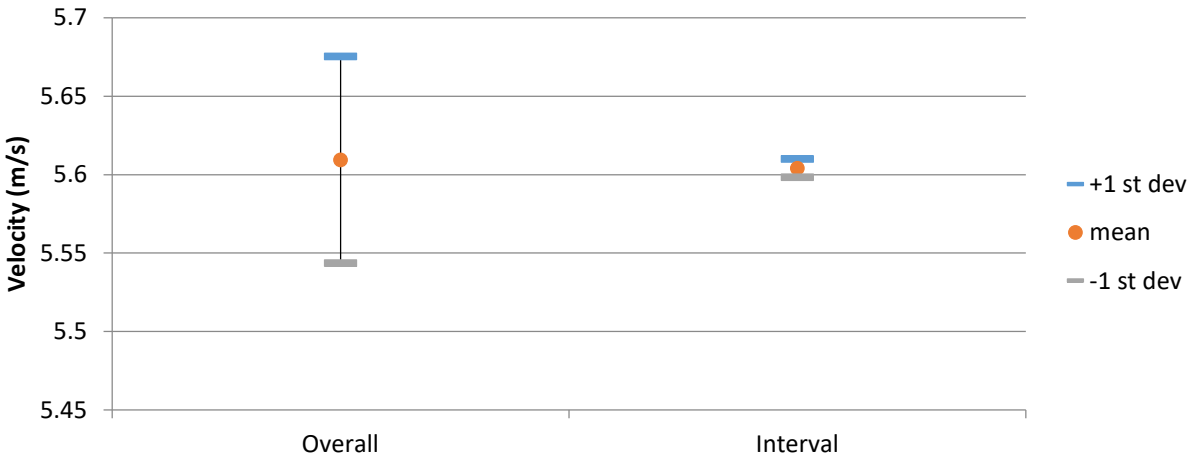
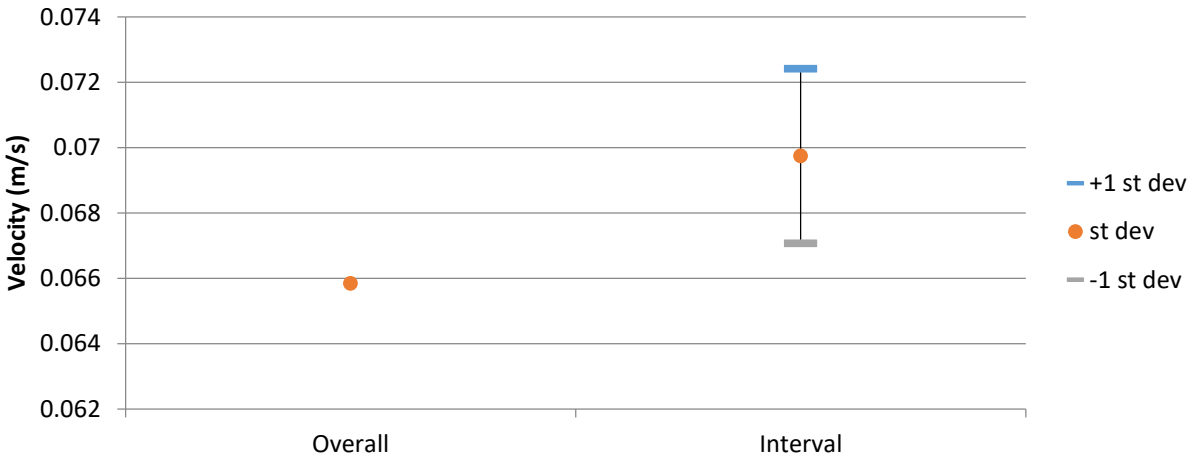


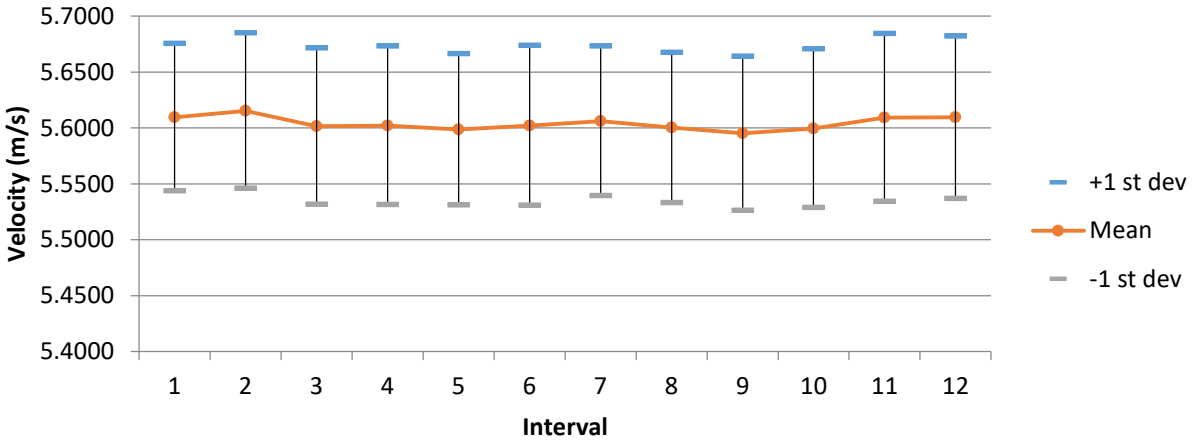
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 307
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 11-Sep-13 First Sample Time: 07:57:28.140

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.2520	5.9256	5.6065	0.0745
u	5.0700	5.8600	5.4659	0.0865
v	-0.7240	0.3550	-0.1461	0.1449
w	-1.9400	-0.5970	-1.2077	0.2323

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.9139	5.2834	5.6015	0.0731	1.3056
2	5.8838	5.3405	5.6159	0.0715	1.2731
3	5.8804	5.2891	5.5871	0.0747	1.3372
4	5.8859	5.2956	5.5988	0.0783	1.3980
5	5.9256	5.3287	5.6200	0.0772	1.3732
6	5.8325	5.2976	5.5790	0.0733	1.3140
7	5.8376	5.3200	5.5888	0.0735	1.3158
8	5.8476	5.2520	5.5869	0.0708	1.2680
9	5.8794	5.3329	5.6255	0.0682	1.2123
10	5.8832	5.3325	5.6070	0.0697	1.2423
11	5.8708	5.3435	5.6217	0.0699	1.2441
12	5.9015	5.3946	5.6454	0.0635	1.1249
		Average	5.6065	0.0720	
		St Dev	0.0197	0.0040	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.4729	-0.1673	-1.1658	0.0759	0.1095	0.1596	1.3865	2.0002	2.9156
2	5.4778	-0.2220	-1.1999	0.0860	0.1000	0.1764	1.5705	1.8261	3.2201
3	5.4840	-0.2457	-1.0212	0.0795	0.1413	0.1320	1.4495	2.5758	2.4072
4	5.5072	-0.1579	-0.9765	0.0882	0.1233	0.1460	1.6020	2.2380	2.6513
5	5.5492	0.0780	-0.8759	0.0841	0.0849	0.0960	1.5159	1.5297	1.7291
6	5.4599	-0.0467	-1.1339	0.0787	0.1160	0.1129	1.4405	2.1248	2.0673
7	5.4598	-0.1632	-1.1704	0.0772	0.1002	0.1331	1.4139	1.8355	2.4374
8	5.4355	-0.2741	-1.2553	0.0754	0.0965	0.0889	1.3866	1.7754	1.6363
9	5.4232	-0.1773	-1.4672	0.0763	0.1531	0.1639	1.4076	2.8231	3.0224
10	5.4530	-0.1391	-1.2884	0.0742	0.1006	0.1129	1.3614	1.8443	2.0710
11	5.4208	-0.0975	-1.4679	0.0809	0.1324	0.1867	1.4930	2.4417	3.4435
12	5.4471	-0.1403	-1.4698	0.0727	0.0857	0.1044	1.3341	1.5724	1.9160

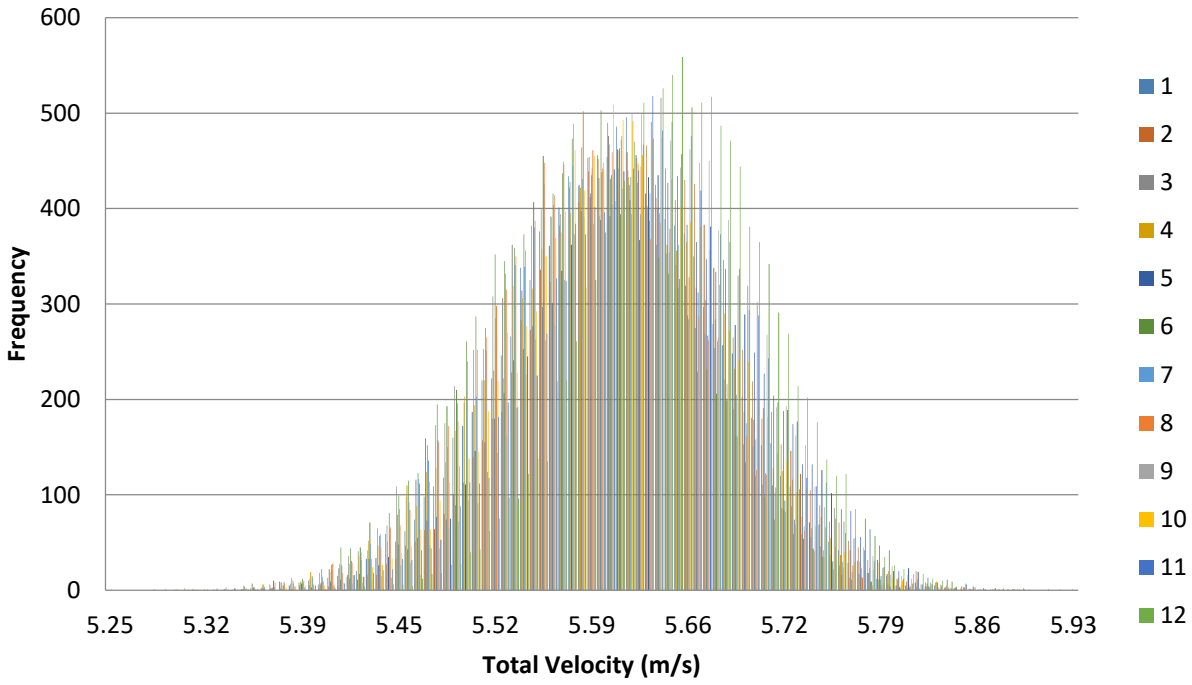


Figure 1. Velocity histogram for each interval (100 bins).

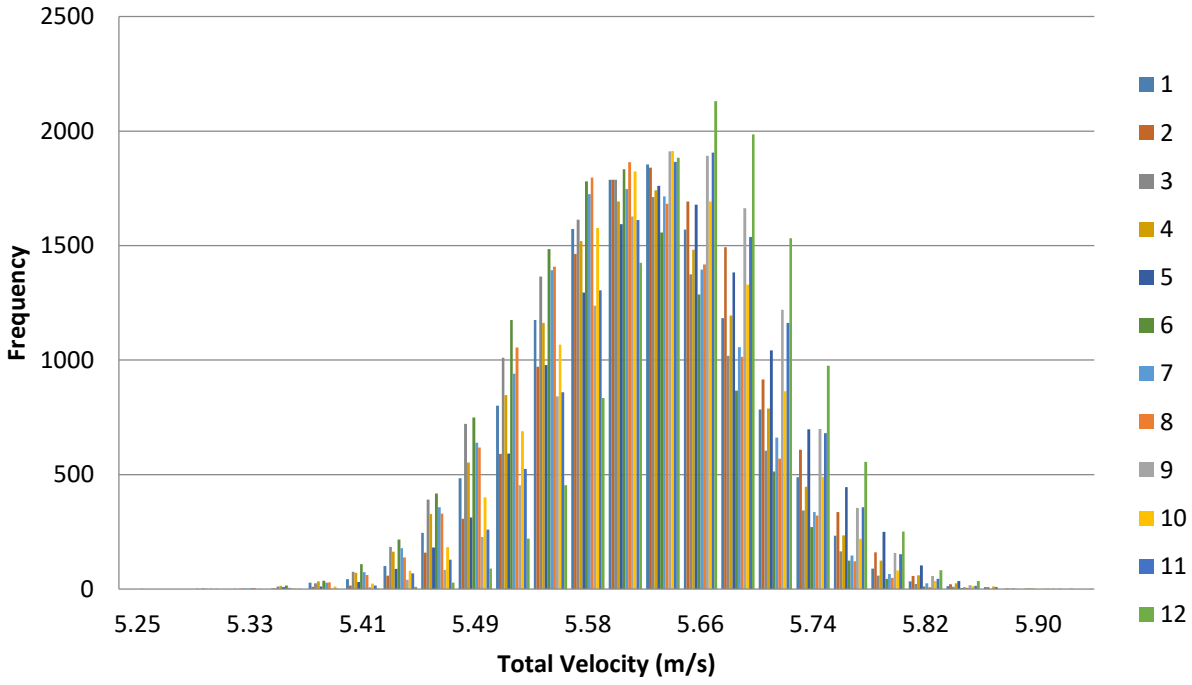
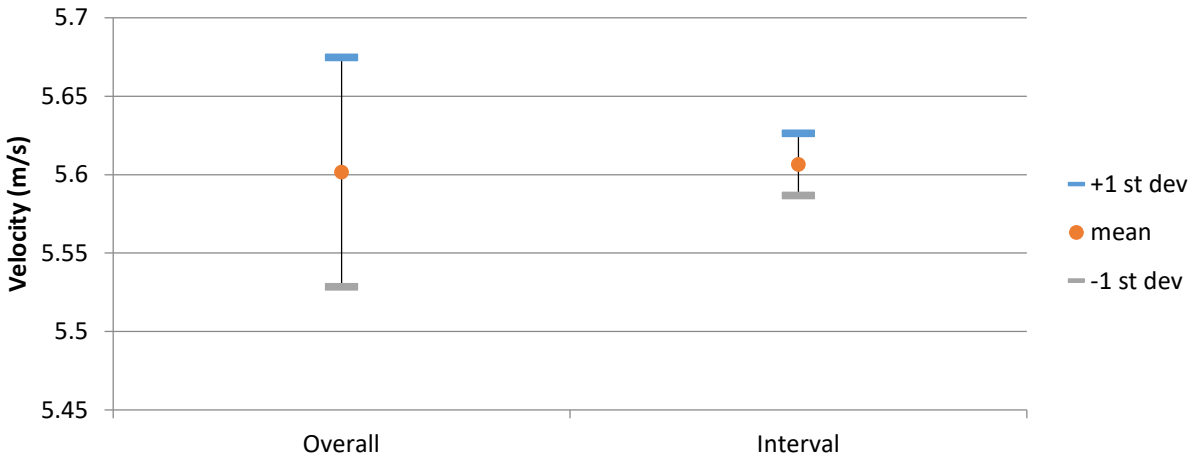
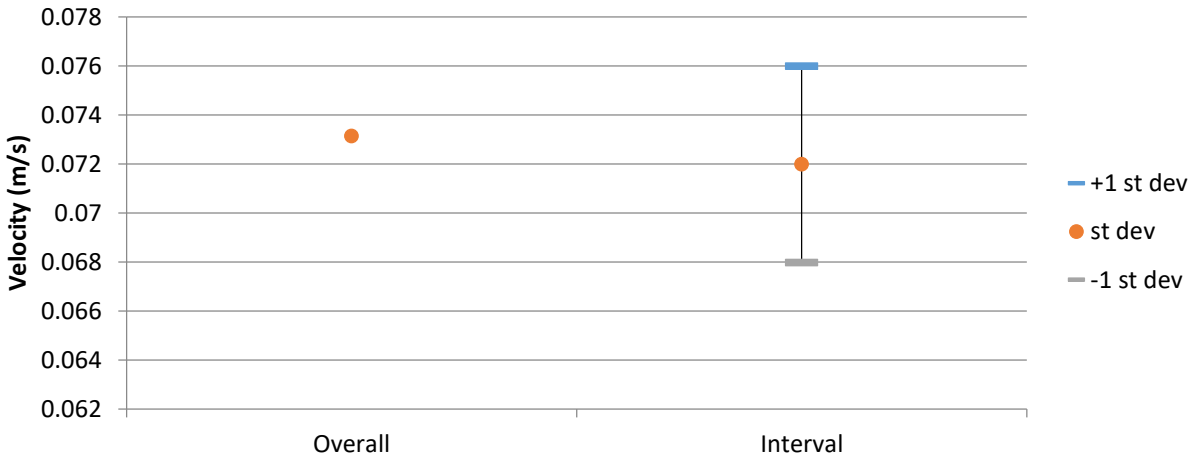


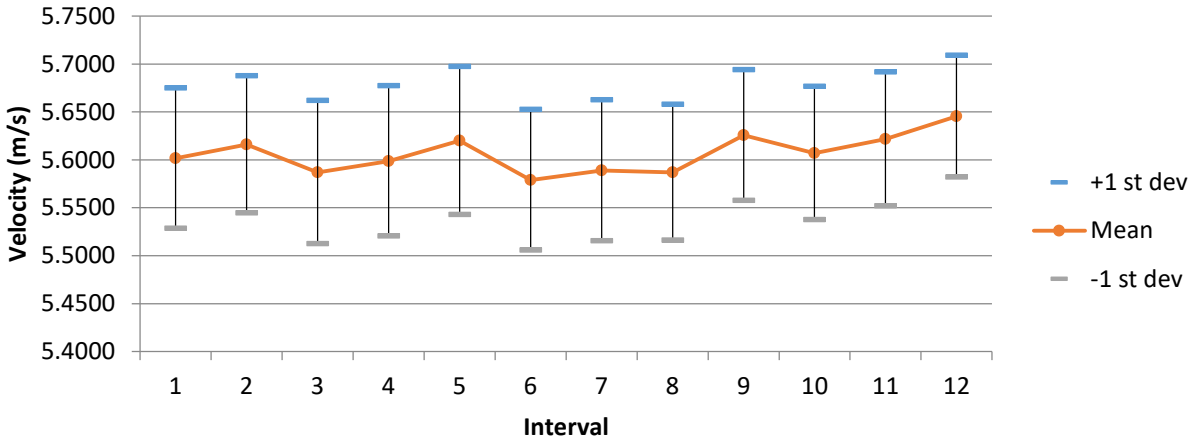
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 308
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 11-Sep-13 First Sample Time: 08:02:14.421

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	9.9272	11.9013	10.9400	0.1938
u	8.7600	11.5000	10.5408	0.2814
v	-2.0400	3.8200	0.2765	0.8164
w	-5.4400	1.2000	-2.6812	0.7755

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.5573	10.3230	10.9619	0.1694	1.5458
2	11.4954	10.1854	10.9058	0.1629	1.4934
3	11.5432	10.3817	10.9445	0.1659	1.5156
4	11.5636	10.1210	10.9284	0.1801	1.6477
5	11.7525	10.1651	10.9016	0.2213	2.0303
6	11.9013	10.2685	11.0760	0.2044	1.8457
7	11.6045	10.1902	10.9355	0.1919	1.7546
8	11.5597	10.3173	10.9048	0.1698	1.5570
9	11.6507	10.2736	10.9601	0.1864	1.7005
10	11.5930	10.2174	10.9462	0.1757	1.6049
11	11.7750	10.1914	10.9317	0.2223	2.0337
12	11.5516	9.9272	10.8836	0.1939	1.7819
		Average	10.9400	0.1870	
		St Dev	0.0493	0.0205	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.4520	-0.8249	-3.1616	0.1765	0.3202	0.3701	1.6886	3.0636	3.5414
2	10.5364	-0.4070	-2.7582	0.1703	0.2197	0.3102	1.6166	2.0853	2.9442
3	10.5379	0.2940	-2.8687	0.1863	0.5670	0.3034	1.7682	5.3803	2.8791
4	10.5321	0.1778	-2.8193	0.1924	0.5431	0.4753	1.8264	5.1569	4.5126
5	10.1929	0.6647	-3.5981	0.3915	0.8906	0.8146	3.8410	8.7377	7.9918
6	10.5485	1.3113	-2.9565	0.2789	0.7305	0.6146	2.6437	6.9247	5.8266
7	10.7182	0.9750	-1.7818	0.2164	0.4666	0.5934	2.0187	4.3530	5.5363
8	10.5825	0.6666	-2.4595	0.2044	0.3783	0.5270	1.9316	3.5748	4.9799
9	10.6581	0.4435	-2.3800	0.2020	0.6294	0.5158	1.8953	5.9051	4.8392
10	10.6612	0.1881	-2.3900	0.1922	0.4482	0.4506	1.8030	4.2037	4.2262
11	10.4343	0.2696	-3.0424	0.3975	0.6646	0.8652	3.8100	6.3697	8.2917
12	10.6356	-0.4395	-1.9607	0.2280	0.6352	0.9385	2.1440	5.9726	8.8238

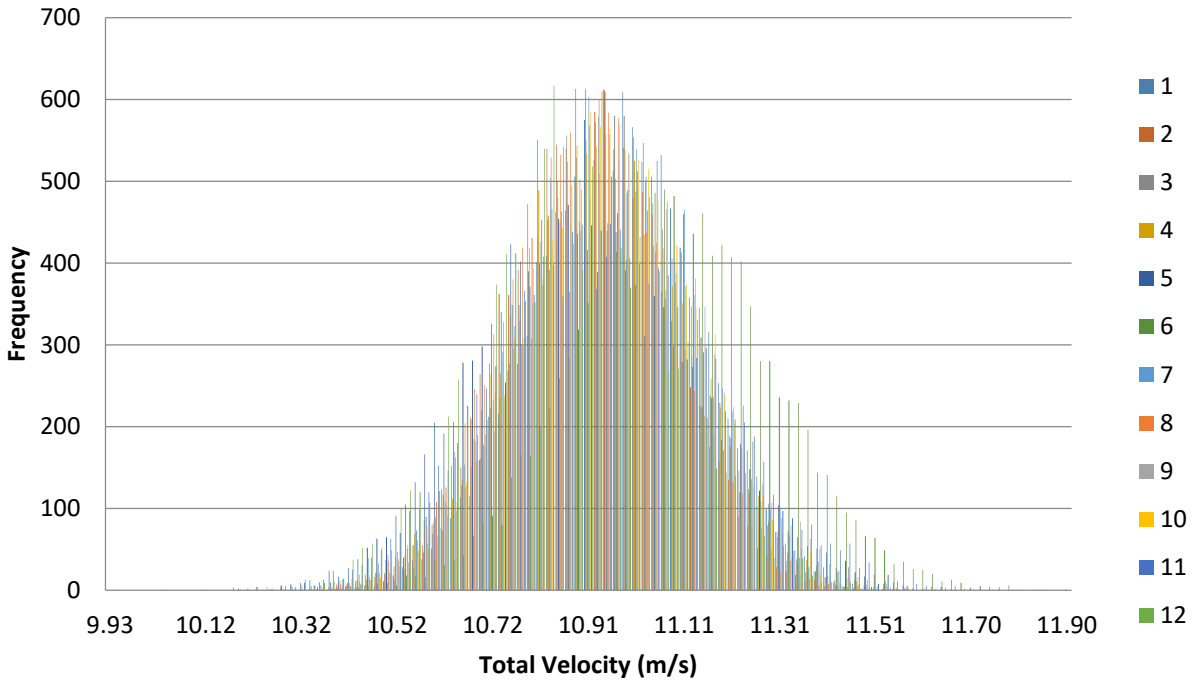


Figure 1. Velocity histogram for each interval (100 bins).

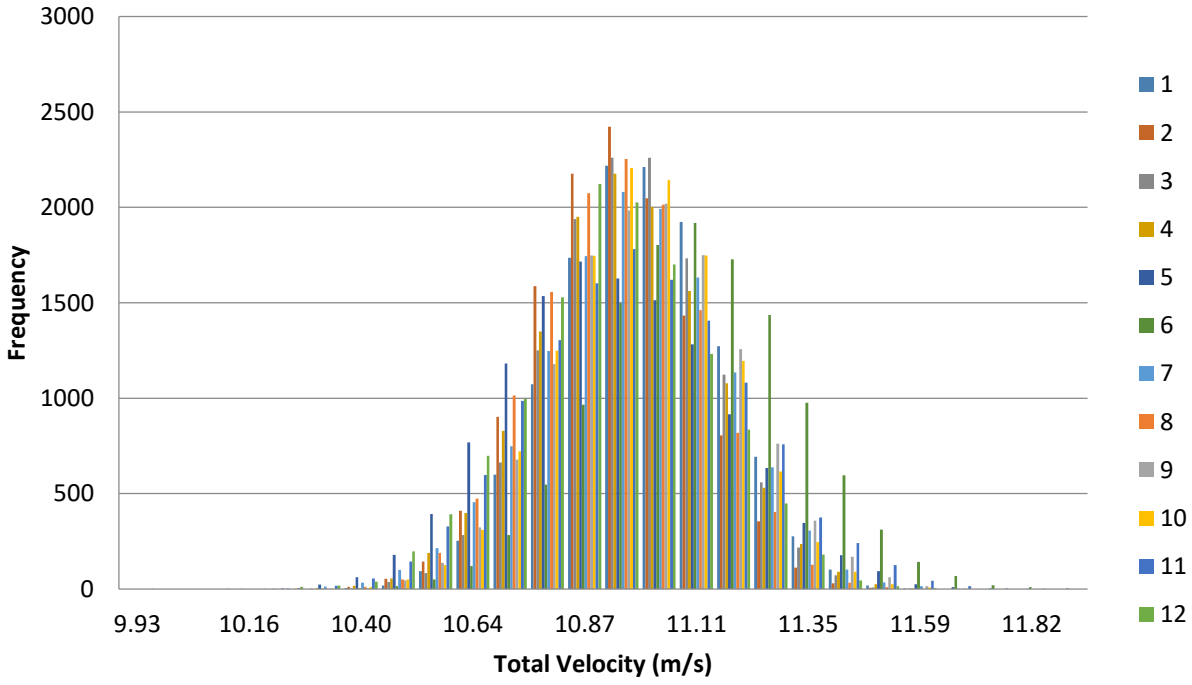
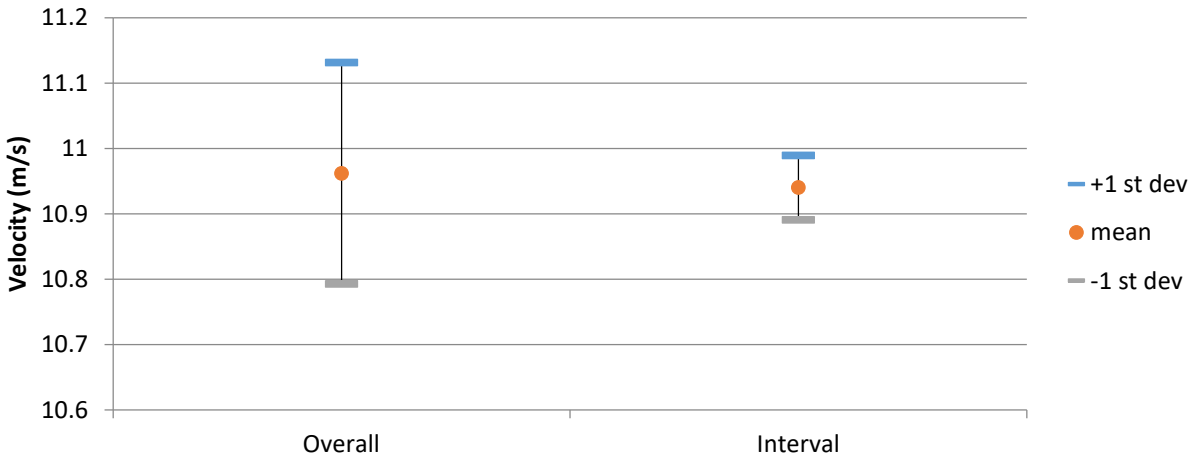
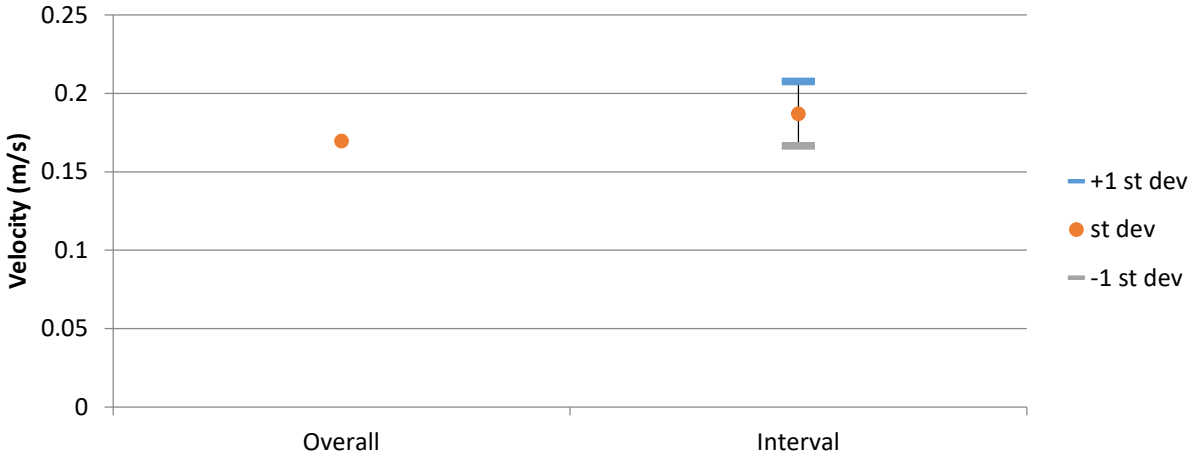


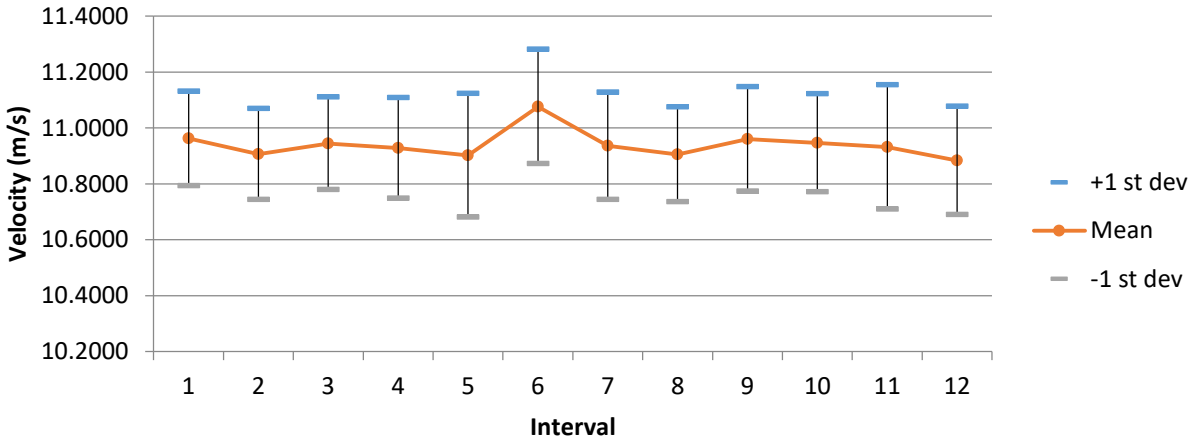
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 309
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 11-Sep-13 First Sample Time: 08:08:56.078

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.0520	6.9535	5.7441	0.1522
u	4.5200	6.7400	5.5654	0.1962
v	-1.6100	2.4700	0.2072	0.4835
w	-3.1600	1.0000	-1.1788	0.5823

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	6.4964	5.2354	5.7051	0.1186	2.0784
2	6.9535	5.2447	5.8490	0.1840	3.1453
3	6.3891	5.3089	5.7098	0.1169	2.0467
4	6.1415	5.2048	5.7124	0.1340	2.3459
5	6.4039	5.2014	5.7816	0.1214	2.1003
6	6.1203	5.2815	5.6710	0.0980	1.7274
7	6.3295	5.1759	5.7098	0.1384	2.4236
8	6.2733	5.3383	5.8328	0.1314	2.2521
9	6.3789	5.4859	5.9028	0.1337	2.2655
10	6.4106	5.1940	5.7707	0.1573	2.7262
11	6.0436	5.3336	5.6428	0.0896	1.5875
12	6.1851	5.0520	5.6414	0.1003	1.7771
		Average	5.7441	0.1270	
		St Dev	0.0838	0.0262	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.5208	0.3023	-1.2815	0.1395	0.4514	0.3542	2.5269	8.1761	6.4160
2	5.6172	0.0902	-1.3134	0.2797	0.5724	0.7432	4.9788	10.1901	13.2315
3	5.4588	-0.3583	-1.5344	0.1395	0.4473	0.3399	2.5558	8.1936	6.2264
4	5.5224	0.0581	-1.3324	0.1949	0.3631	0.4518	3.5284	6.5746	8.1814
5	5.6892	0.1376	-0.8163	0.1485	0.3932	0.4616	2.6094	6.9110	8.1145
6	5.4923	0.1036	-1.3193	0.1086	0.2949	0.3932	1.9767	5.3701	7.1595
7	5.5875	0.4723	-0.8184	0.1289	0.5362	0.4511	2.3063	9.5965	8.0725
8	5.8088	0.0861	-0.2077	0.1276	0.3134	0.3627	2.1969	5.3952	6.2438
9	5.6523	0.1302	-1.5782	0.1994	0.3831	0.4673	3.5287	6.7776	8.2671
10	5.4678	0.7839	-1.5700	0.2001	0.3923	0.3945	3.6590	7.1747	7.2141
11	5.5239	0.3785	-1.0117	0.0978	0.2618	0.3005	1.7699	4.7395	5.4402
12	5.4443	0.3005	-1.3617	0.1371	0.3228	0.3580	2.5179	5.9288	6.5751

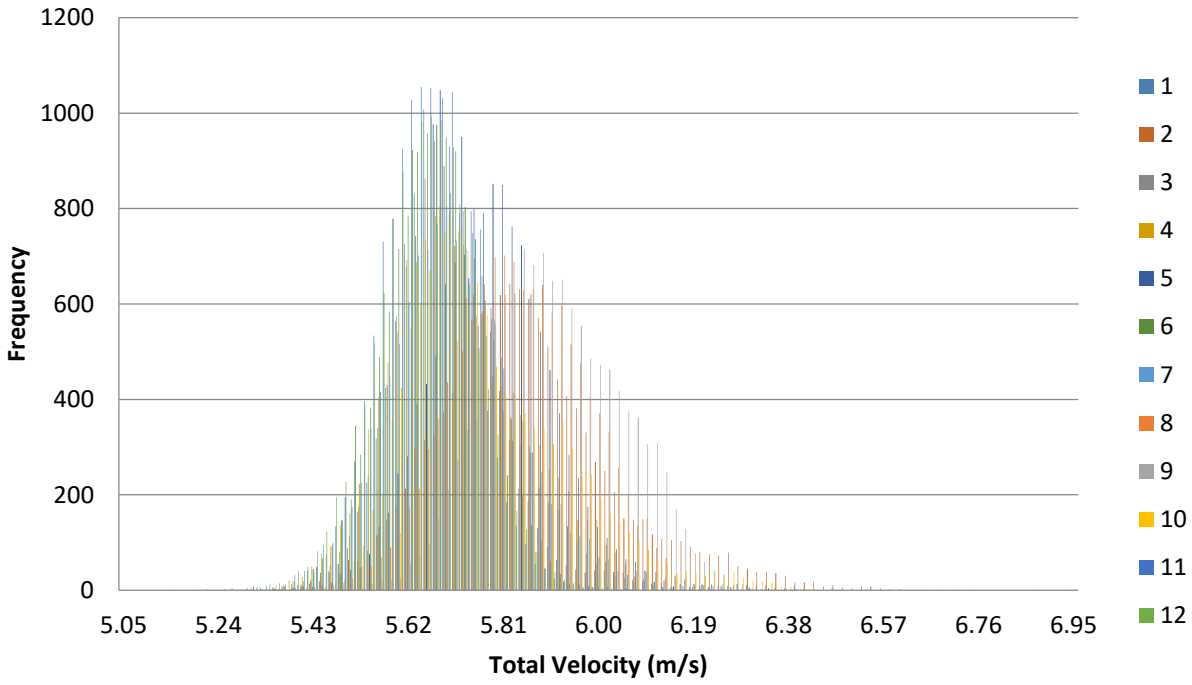


Figure 1. Velocity histogram for each interval (100 bins).

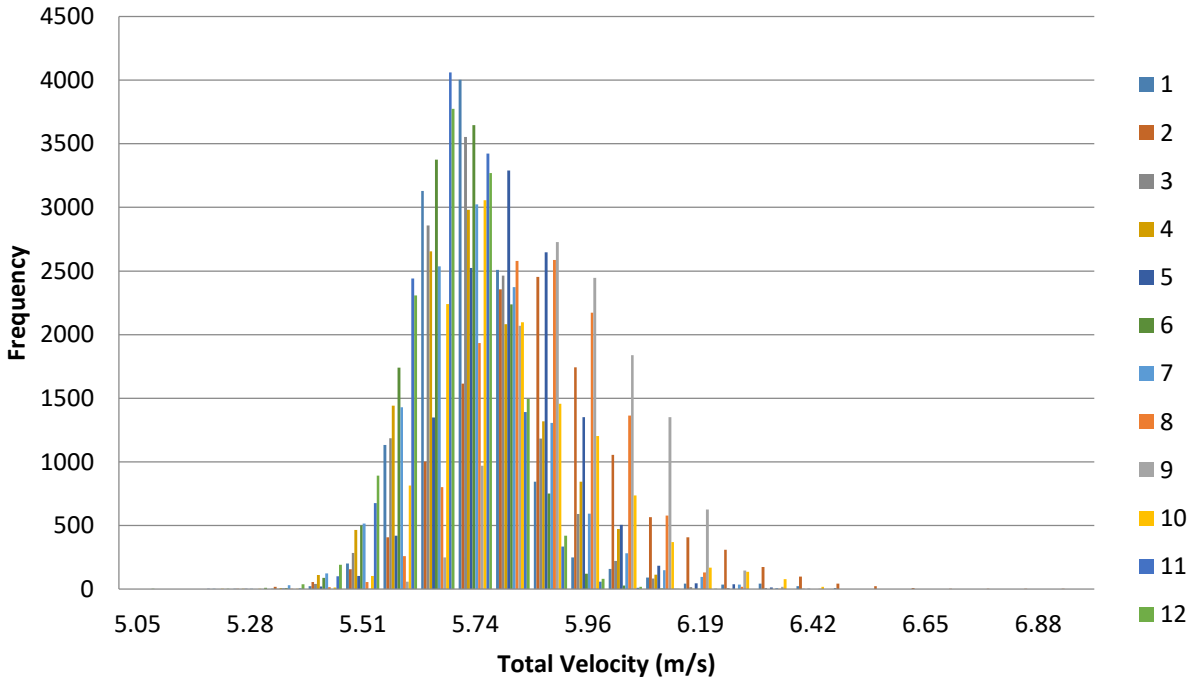
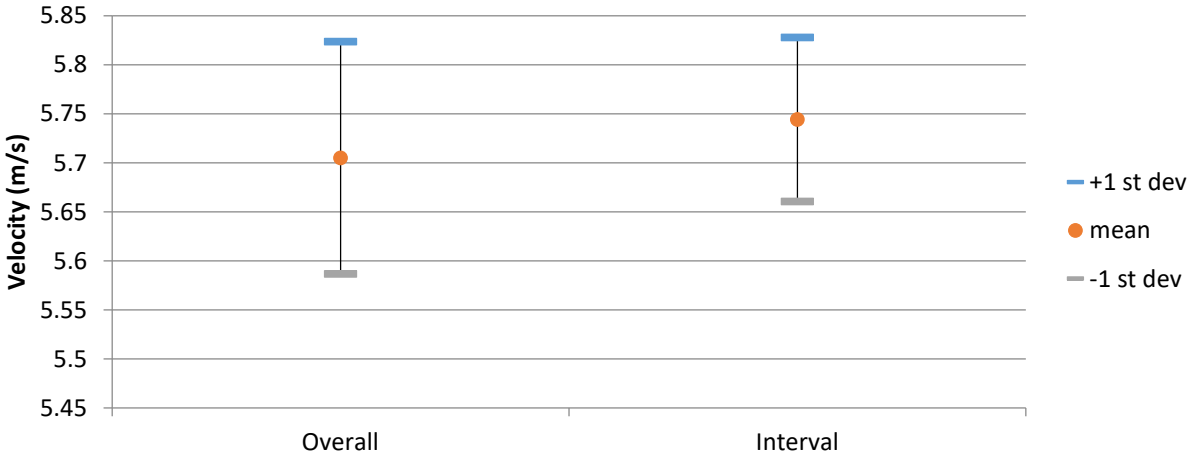
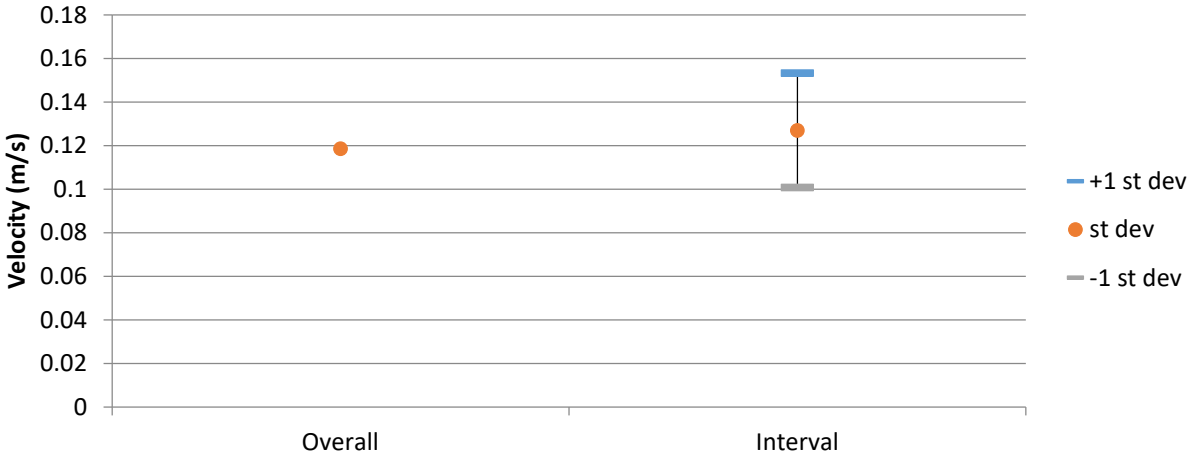


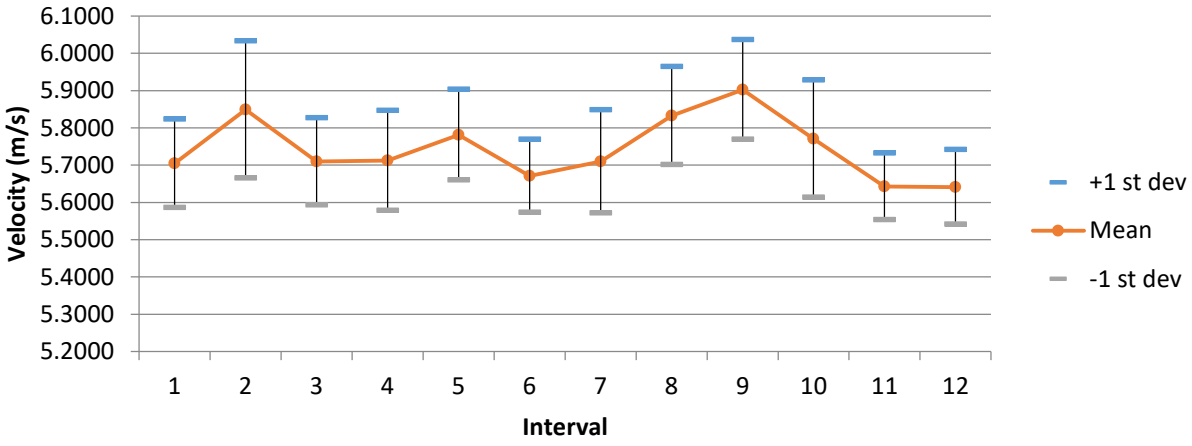
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 310
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 11-Sep-13 First Sample Time: 08:13:57.187

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	9.6375	12.3702	11.0363	0.2698
u	8.6900	12.1000	10.6100	0.3366
v	-3.2900	4.3500	0.0687	0.8399
w	-6.0000	0.3690	-2.7542	0.9435

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	12.0721	9.6375	11.0404	0.2195	1.9882
2	11.8120	10.3374	11.0916	0.1939	1.7478
3	11.5268	10.1689	10.8932	0.1971	1.8090
4	11.9072	10.2439	11.0484	0.2263	2.0485
5	11.8274	10.1888	10.9516	0.2469	2.2541
6	12.0034	10.1264	10.9881	0.2441	2.2216
7	12.3702	10.3604	11.2481	0.3092	2.7488
8	12.2738	10.4823	11.3644	0.2769	2.4363
9	11.7636	10.4023	11.0836	0.1750	1.5791
10	11.7949	10.1209	10.9108	0.2182	2.0000
11	11.8247	10.1676	10.8294	0.1779	1.6430
12	11.9287	10.0986	10.9857	0.2144	1.9512
		Average	11.0363	0.2249	
		St Dev	0.1505	0.0396	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.6445	0.0165	-2.6653	0.2739	0.8457	0.8596	2.5735	7.9453	8.0758
2	10.5409	-0.3247	-3.3749	0.2061	0.4789	0.4280	1.9553	4.5436	4.0602
3	10.5696	-0.7626	-2.3443	0.2040	0.6016	0.7089	1.9305	5.6917	6.7074
4	10.5655	-0.0543	-3.1004	0.2924	0.5482	0.6985	2.7674	5.1882	6.6113
5	10.1970	0.5891	-3.7905	0.4374	0.7720	0.7187	4.2899	7.5708	7.0478
6	10.3180	0.6043	-3.5707	0.3774	0.7796	0.6871	3.6575	7.5559	6.6596
7	10.9274	0.5964	-2.1934	0.3264	1.0783	0.8789	2.9867	9.8681	8.0432
8	10.7494	-0.4645	-3.4673	0.2948	0.8748	0.7667	2.7428	8.1385	7.1322
9	10.7462	0.2260	-2.6530	0.1642	0.4050	0.3424	1.5282	3.7686	3.1862
10	10.6877	-0.2451	-2.0928	0.1842	0.3172	0.5404	1.7234	2.9678	5.0565
11	10.6443	-0.0243	-1.9498	0.1874	0.3251	0.2500	1.7610	3.0538	2.3485
12	10.7297	0.6662	-1.8492	0.2570	0.9405	0.8902	2.3956	8.7651	8.2964

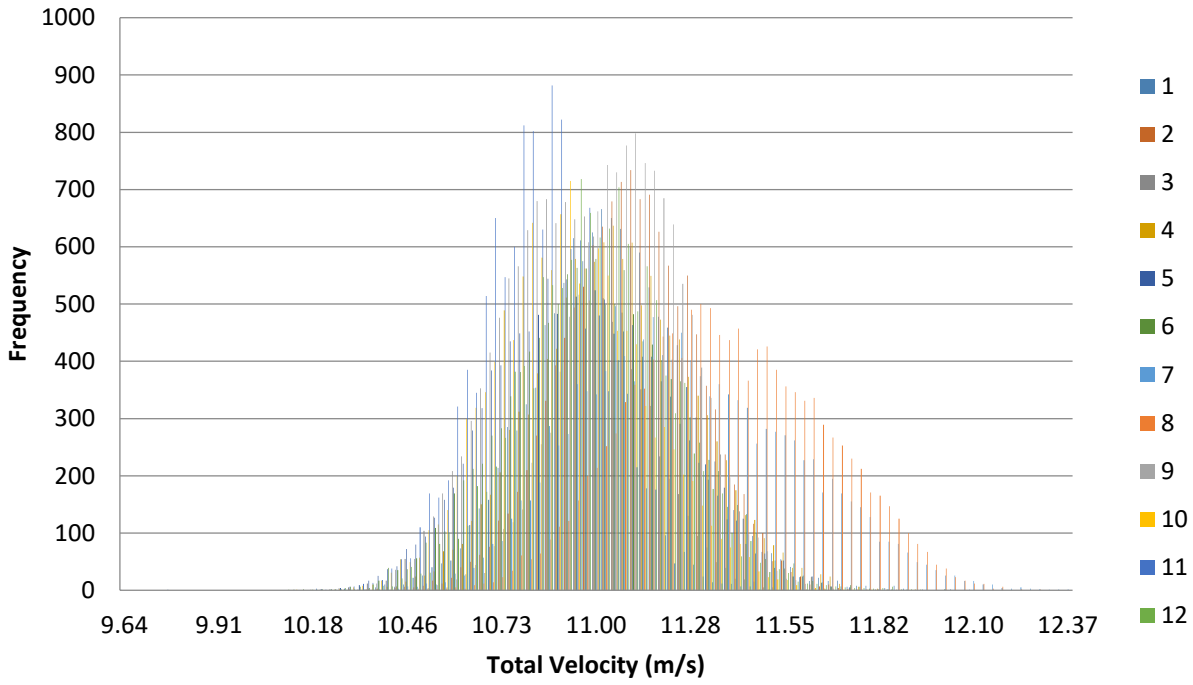


Figure 1. Velocity histogram for each interval (100 bins).

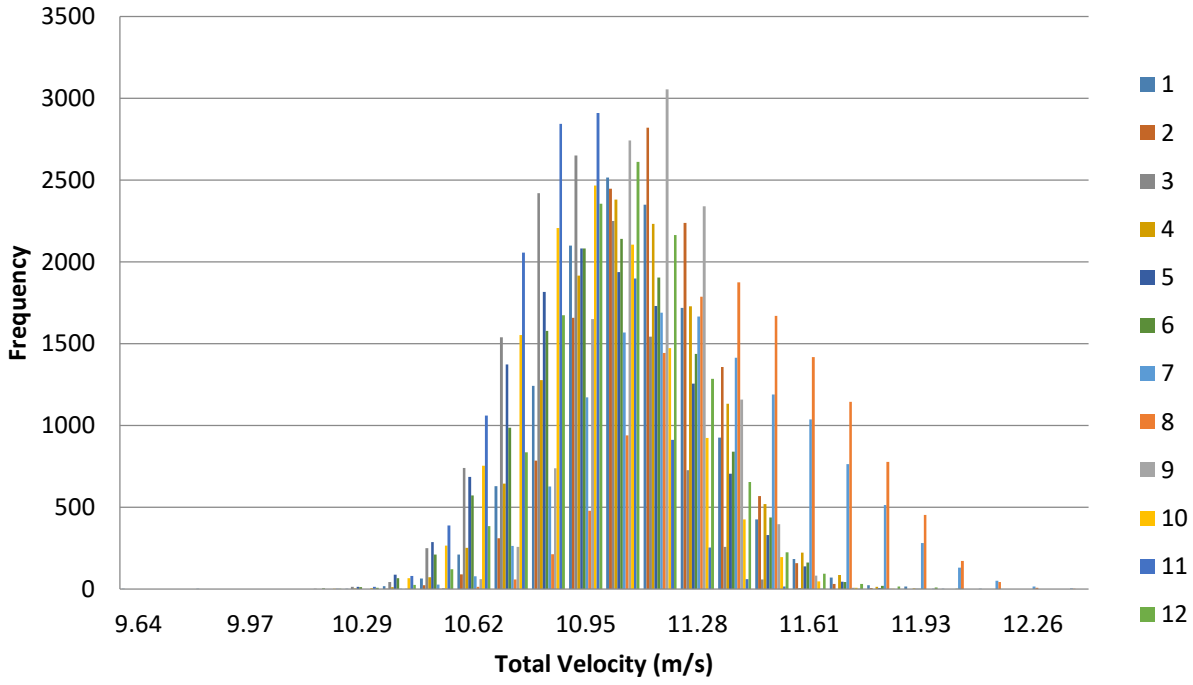
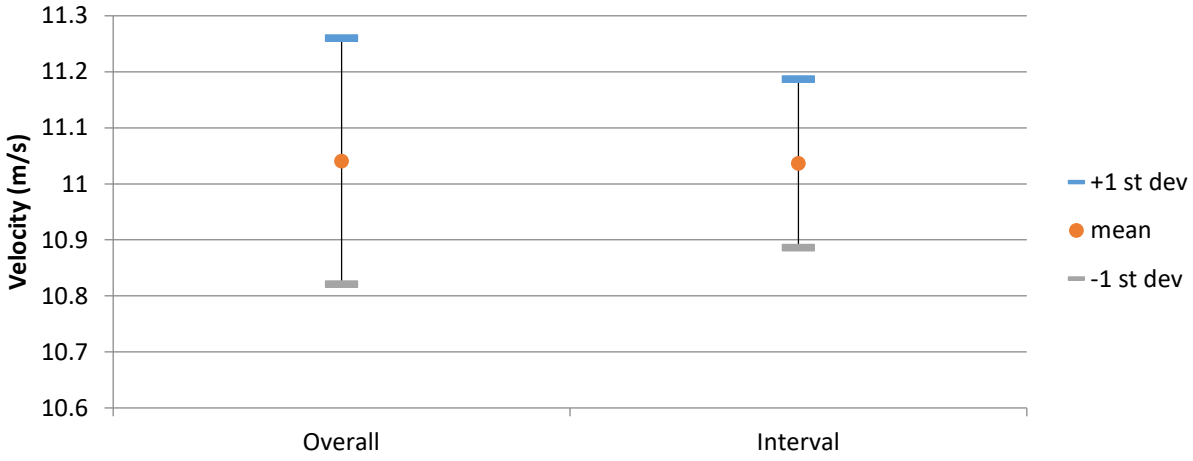
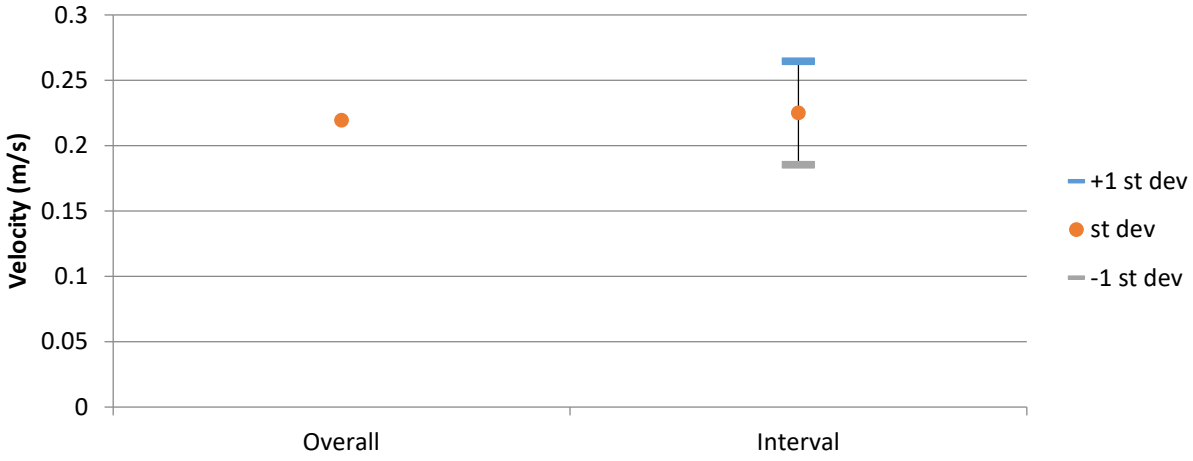


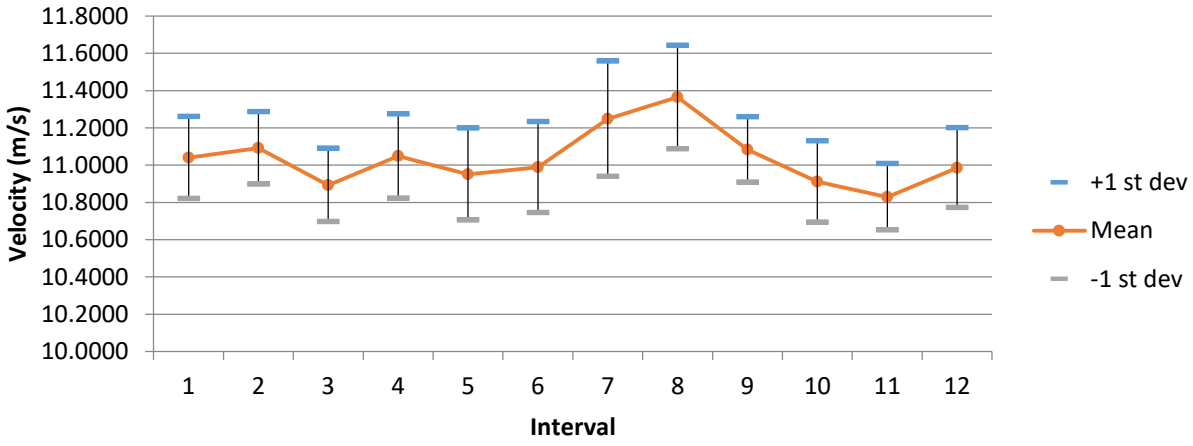
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 311
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 11-Sep-13 First Sample Time: 08:25:45.921

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	9.5087	12.2813	10.9064	0.2009
u	9.4200	11.9000	10.5622	0.2244
v	-3.0300	2.9300	0.1396	0.8089
w	-4.5000	1.2800	-2.4606	0.8068

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.4172	10.1031	10.7738	0.1800	1.6707
2	11.7759	10.1364	10.9129	0.2032	1.8621
3	11.8183	9.8045	10.8292	0.1819	1.6799
4	12.2813	9.5087	10.9303	0.2470	2.2595
5	11.5478	10.0898	10.9205	0.1804	1.6515
6	11.6291	10.1926	10.9099	0.1972	1.8077
7	11.5848	10.1619	10.8850	0.1883	1.7296
8	11.5537	10.1059	10.9216	0.1840	1.6846
9	11.5037	10.2806	10.8899	0.1690	1.5522
10	11.5992	10.3474	11.0150	0.1727	1.5677
11	11.6010	10.2705	10.9853	0.1758	1.6005
12	11.6774	9.7854	10.9035	0.2076	1.9038
		Average	10.9064	0.1906	
		St Dev	0.0628	0.0214	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.5292	-0.1896	-2.2294	0.1834	0.3255	0.3136	1.7418	3.0917	2.9787
2	10.7359	-0.6916	-1.1996	0.2221	0.9006	1.0470	2.0685	8.3884	9.7521
3	10.5655	-0.0833	-2.2084	0.2072	0.6251	0.5982	1.9613	5.9167	5.6617
4	10.6272	0.8589	-2.1634	0.2422	0.6750	0.8134	2.2787	6.3514	7.6538
5	10.4363	-0.2942	-3.0462	0.1979	0.8827	0.4351	1.8967	8.4582	4.1690
6	10.5719	-0.1607	-2.4899	0.2483	0.7003	0.7223	2.3488	6.6240	6.8325
7	10.5586	0.2460	-2.3942	0.2416	0.5749	0.9238	2.2877	5.4445	8.7496
8	10.5039	-0.4302	-2.8433	0.1891	0.5810	0.5840	1.8003	5.5316	5.5601
9	10.5521	0.4473	-2.6040	0.1883	0.3707	0.3431	1.7842	3.5126	3.2513
10	10.4983	1.1385	-3.0701	0.2159	0.4967	0.3617	2.0563	4.7315	3.4453
11	10.5772	0.6400	-2.8405	0.2027	0.3844	0.4070	1.9163	3.6345	3.8477
12	10.5904	0.1946	-2.4391	0.2035	0.5409	0.6718	1.9212	5.1074	6.3432

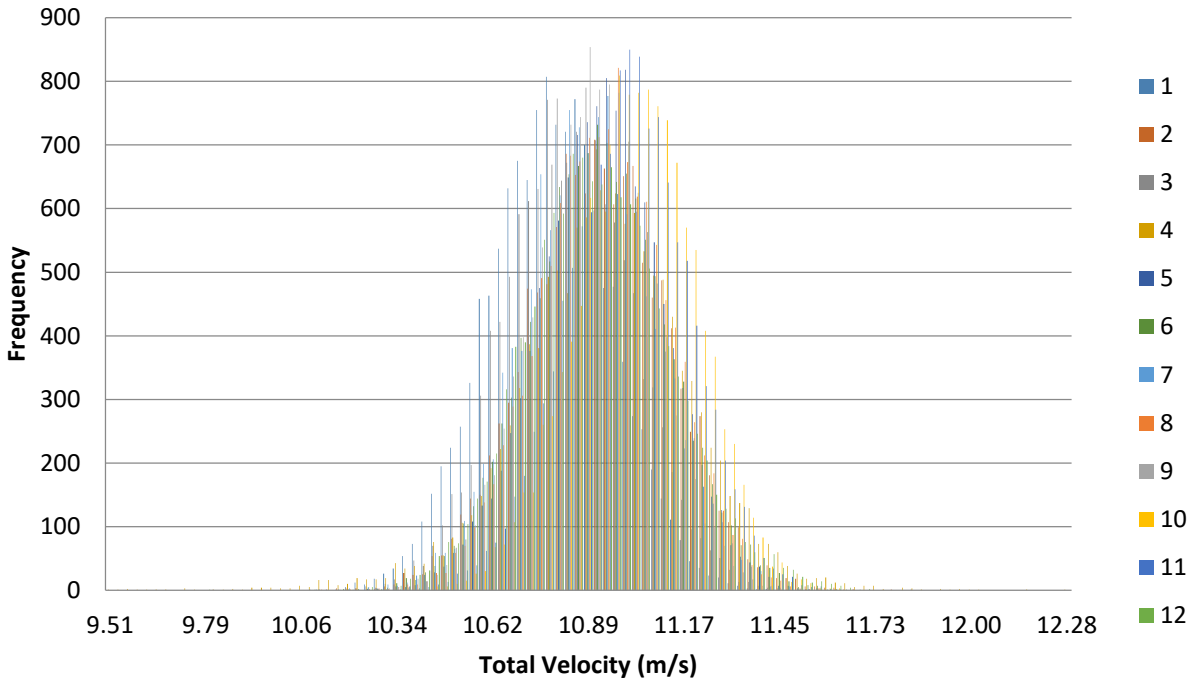


Figure 1. Velocity histogram for each interval (100 bins).

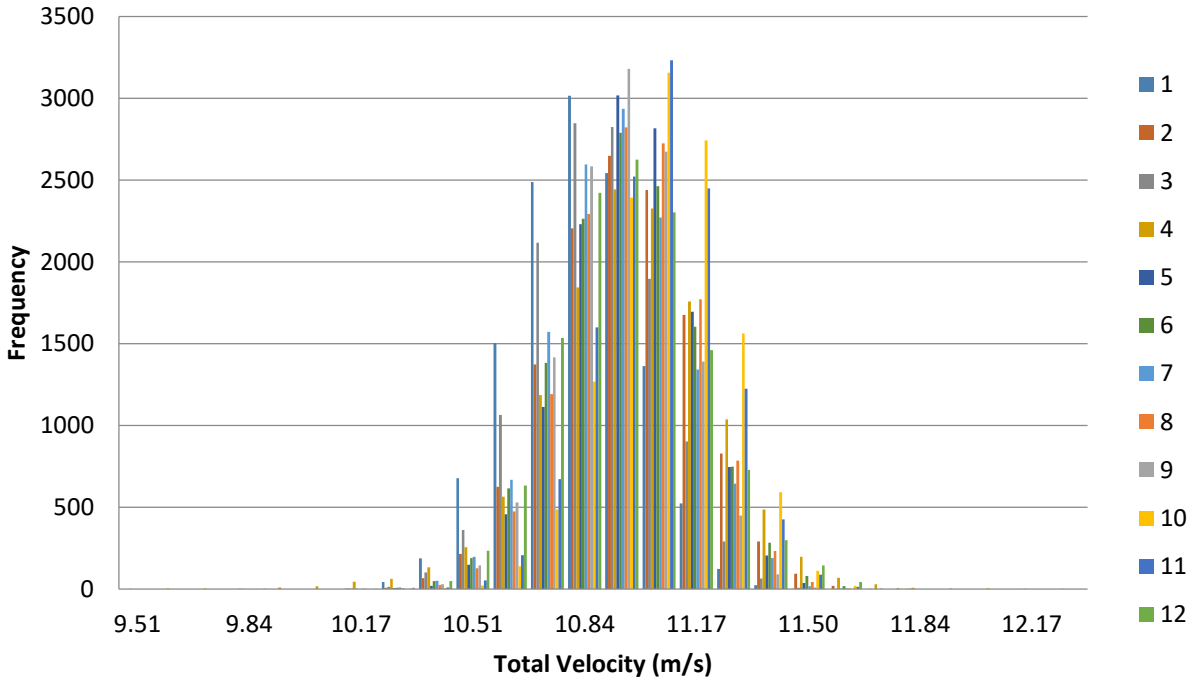
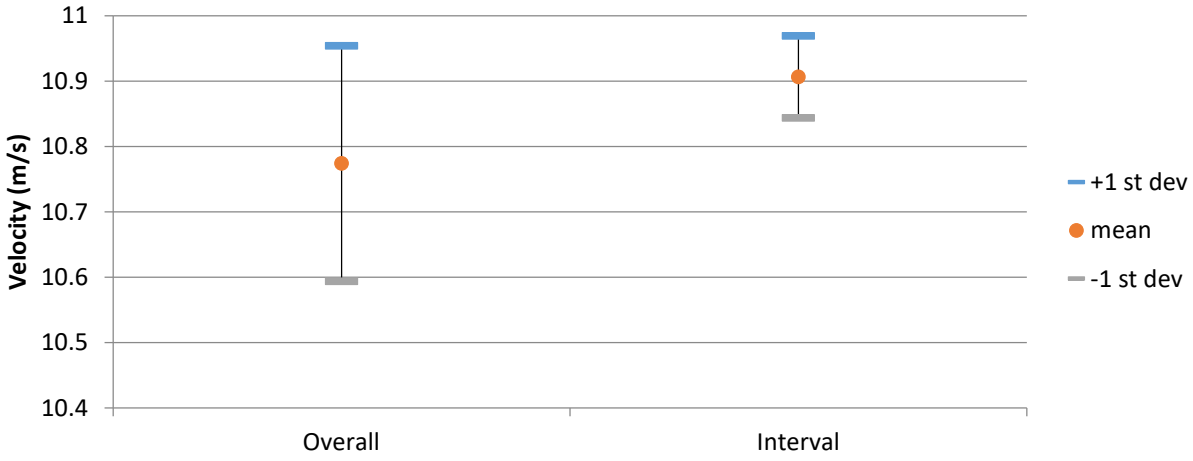
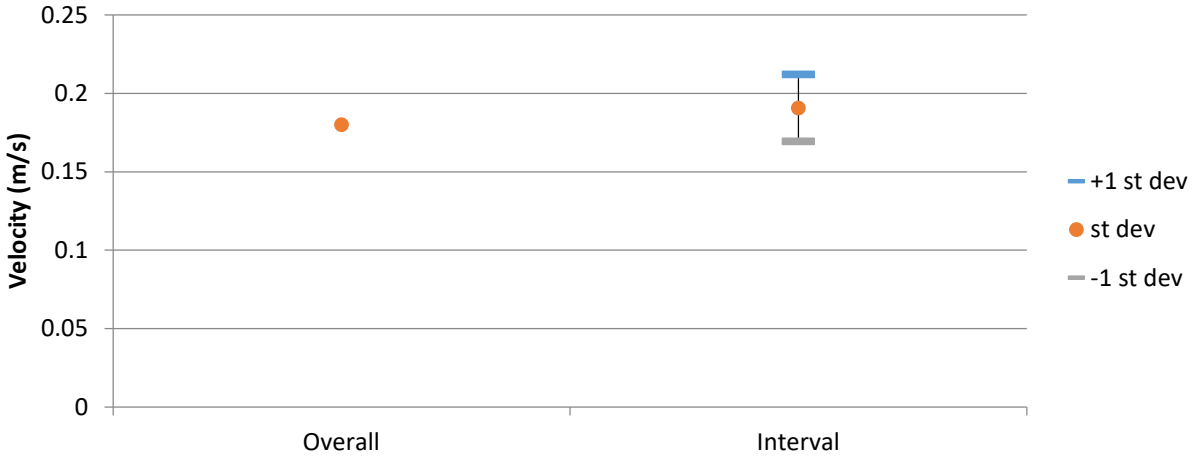


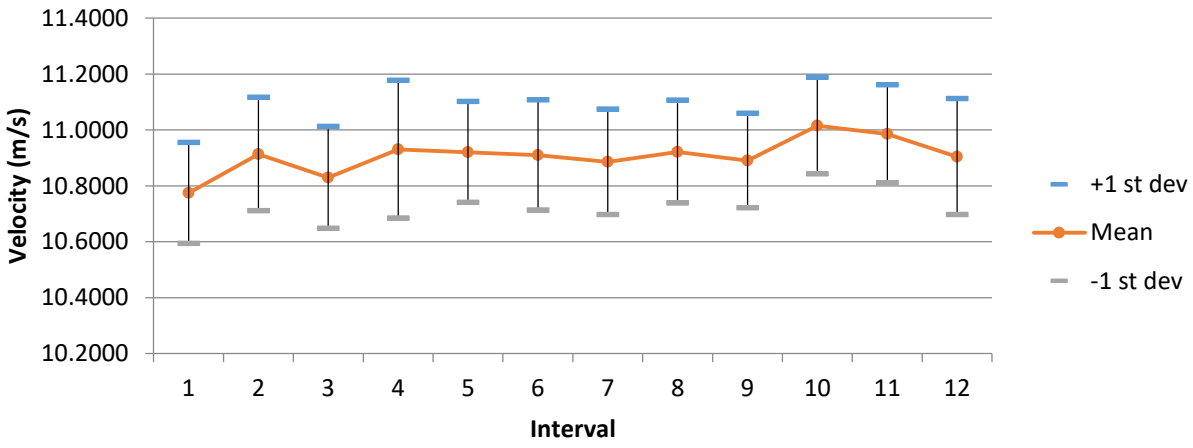
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 312
Blockage Condition: Existing Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 11-Sep-13 First Sample Time: 08:32:39.546

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	4.6506	6.7417	5.5918	0.1256
u	4.4300	6.7100	5.3964	0.2030
v	-1.7200	2.4900	-0.0765	0.5309
w	-2.9700	0.8730	-1.1769	0.6700

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	6.0731	5.1111	5.5812	0.0989	1.7712
2	6.0594	4.6506	5.5379	0.1032	1.8639
3	6.2270	5.1429	5.5521	0.1135	2.0451
4	6.3948	4.7767	5.5883	0.1153	2.0630
5	5.9071	5.2029	5.5315	0.0902	1.6311
6	6.7417	5.0483	5.6757	0.1726	3.0403
7	6.3214	5.1154	5.5921	0.1043	1.8644
8	5.8804	5.1787	5.5719	0.0824	1.4794
9	5.9117	5.2354	5.5967	0.0845	1.5100
10	5.8743	5.2207	5.5565	0.0855	1.5382
11	6.0015	5.1249	5.5956	0.1100	1.9661
12	6.4033	4.9206	5.7217	0.1634	2.8561
		Average	5.5918	0.1103	
		St Dev	0.0554	0.0293	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.5433	0.2813	-0.2541	0.0986	0.4147	0.3265	1.7785	7.4812	5.8899
2	5.2882	-0.2659	-1.3407	0.2021	0.3711	0.8173	3.8220	7.0177	15.4543
3	5.1628	0.6728	-1.8352	0.1919	0.3970	0.4114	3.7164	7.6903	7.9692
4	5.2671	0.0542	-1.7554	0.1867	0.3798	0.4855	3.5439	7.2104	9.2170
5	5.2461	-0.1851	-1.5919	0.2124	0.3487	0.5908	4.0495	6.6470	11.2615
6	5.5211	0.0061	-0.9901	0.2201	0.5507	0.6543	3.9874	9.9744	11.8504
7	5.4451	0.1339	-1.1742	0.1178	0.3209	0.3462	2.1630	5.8927	6.3588
8	5.4998	-0.2056	-0.8016	0.0897	0.2125	0.2603	1.6307	3.8634	4.7320
9	5.3941	-0.1221	-1.3992	0.0959	0.3354	0.3726	1.7783	6.2177	6.9083
10	5.3856	-0.6276	-1.0848	0.1042	0.3612	0.4064	1.9339	6.7066	7.5458
11	5.4067	-0.6682	-1.0392	0.1374	0.4142	0.6115	2.5407	7.6616	11.3092
12	5.5965	0.0067	-0.8554	0.1478	0.5468	0.6249	2.6411	9.7700	11.1653

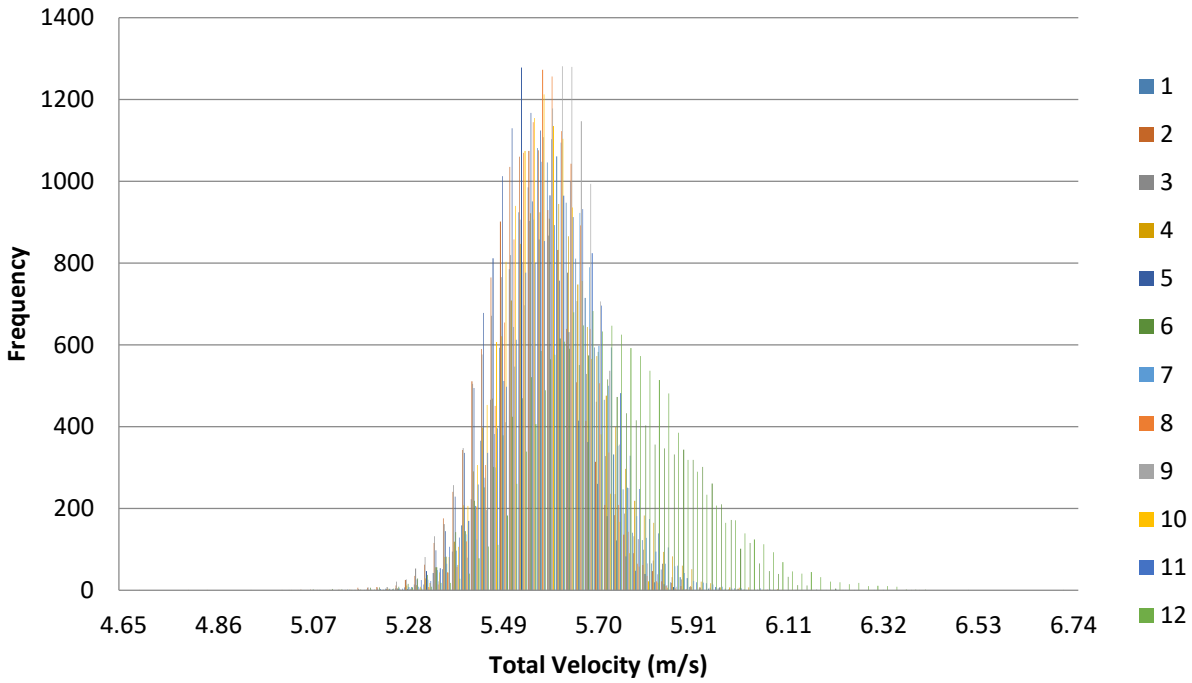


Figure 1. Velocity histogram for each interval (100 bins).

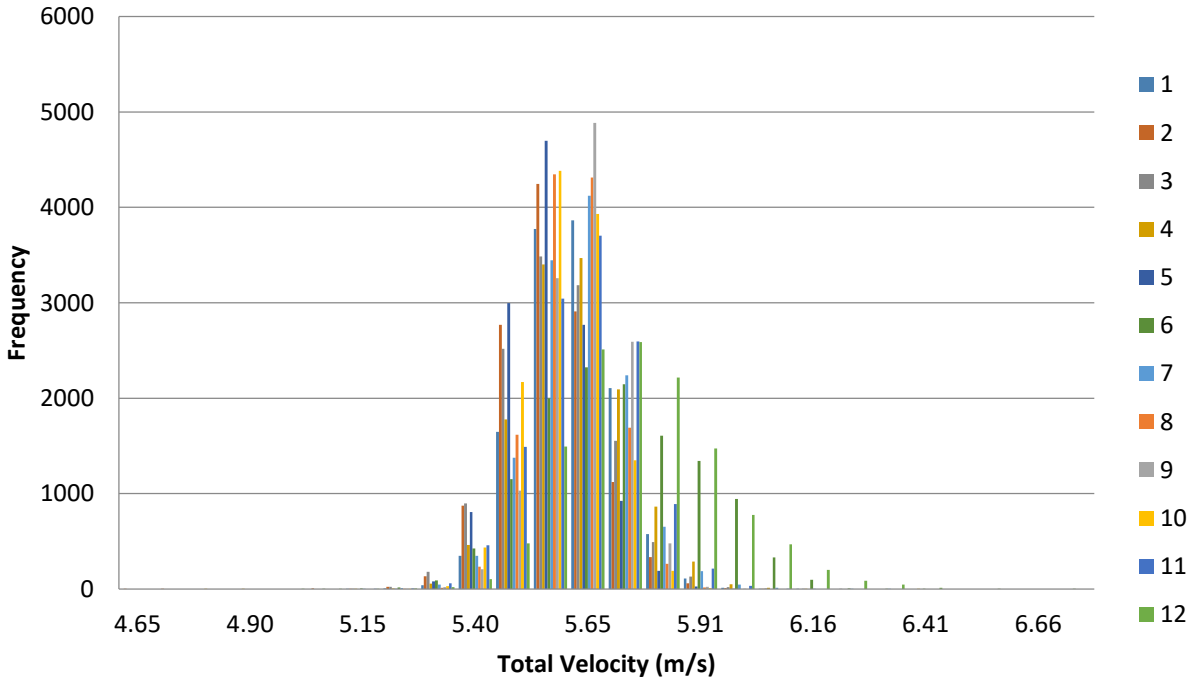
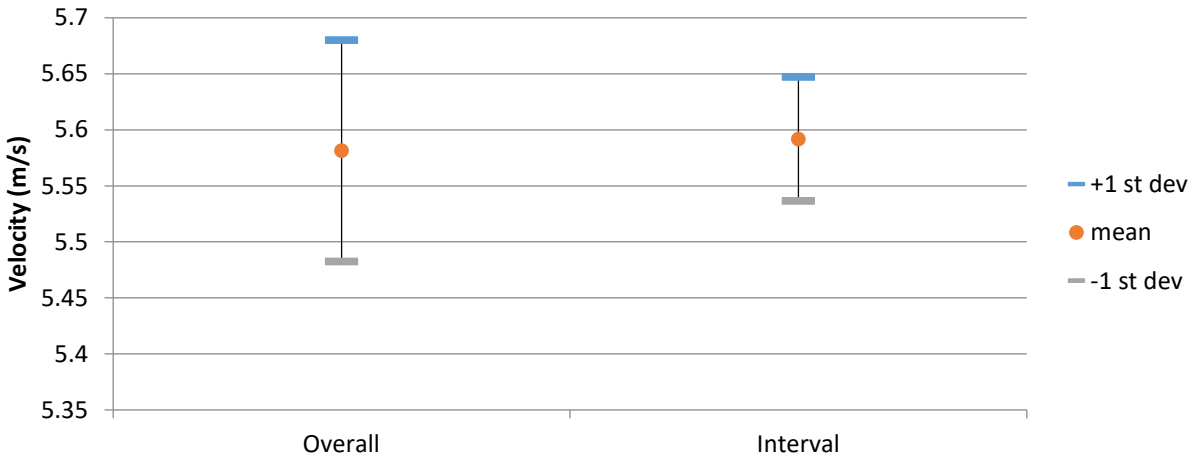
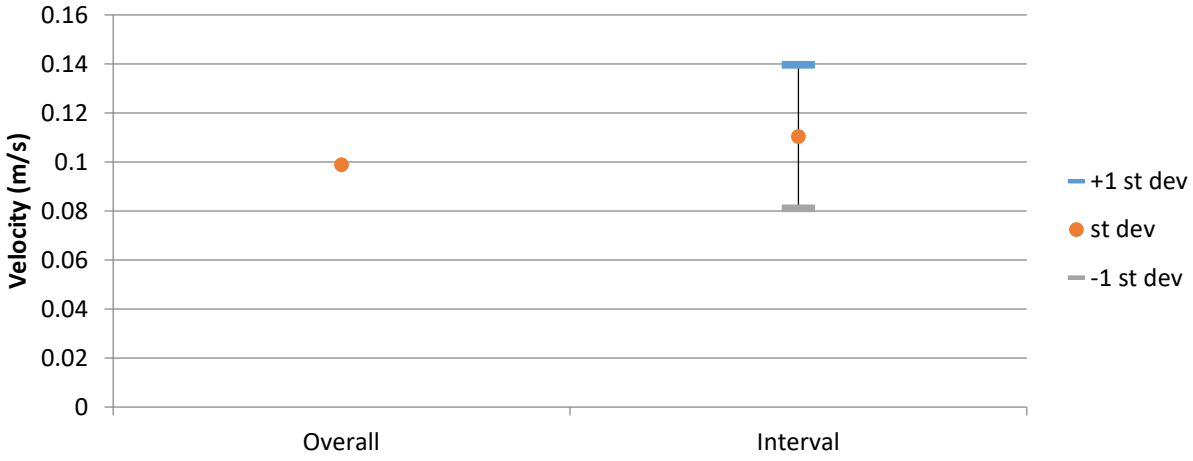


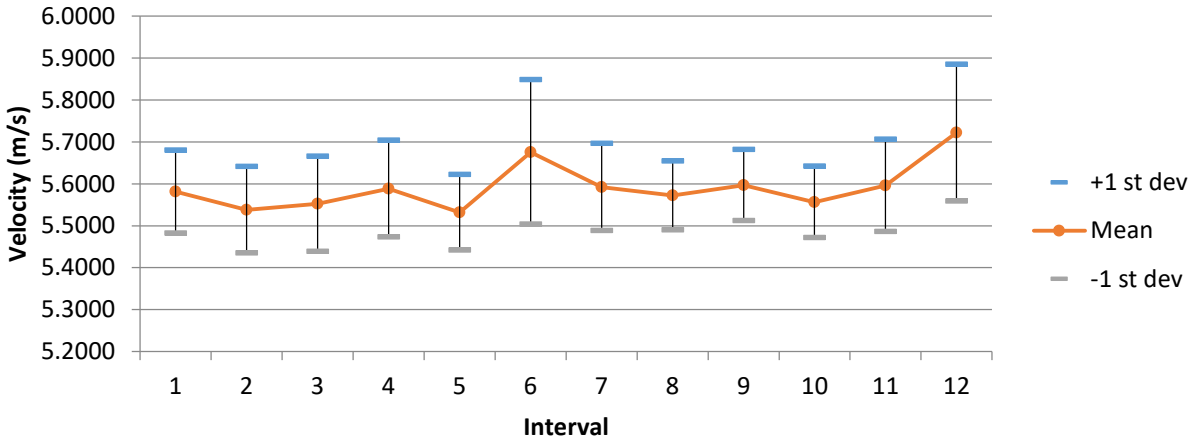
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 313
Blockage Condition: All Buildings
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 11-Sep-13 First Sample Time: 08:50:52.250

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	4.8672	6.6353	5.6653	0.1192
u	4.6400	6.5500	5.4425	0.1540
v	-2.0100	2.2700	-0.1125	0.5690
w	-2.8700	1.7000	-1.3348	0.5894

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.9378	5.1916	5.5996	0.0875	1.5635
2	6.0275	5.2309	5.6264	0.0971	1.7262
3	6.0840	5.2331	5.6536	0.0931	1.6467
4	6.0604	5.2994	5.6544	0.0931	1.6468
5	6.1115	5.2768	5.6707	0.1236	2.1792
6	6.0760	5.2379	5.6884	0.0799	1.4051
7	6.2172	5.2137	5.6802	0.1118	1.9676
8	6.3125	5.0929	5.6416	0.1198	2.1228
9	6.2909	4.9033	5.6497	0.1232	2.1809
10	6.2193	5.2095	5.6546	0.0988	1.7464
11	6.2710	5.2508	5.6695	0.0999	1.7622
12	6.6353	4.8672	5.7951	0.1675	2.8911
		Average	5.6653	0.1079	
		St Dev	0.0473	0.0235	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.4432	-0.1269	-1.2165	0.0984	0.2807	0.3882	1.8078	5.1564	7.1326
2	5.4578	-0.3972	-1.2410	0.0963	0.2332	0.3409	1.7644	4.2725	6.2456
3	5.3504	0.0722	-1.7445	0.1396	0.3888	0.3550	2.6087	7.2664	6.6354
4	5.3775	-0.2051	-1.6364	0.1170	0.4705	0.3296	2.1760	8.7501	6.1291
5	5.4835	-0.3578	-1.2705	0.1290	0.4053	0.4245	2.3525	7.3907	7.7418
6	5.4507	0.0114	-1.5808	0.0990	0.2593	0.2802	1.8161	4.7577	5.1403
7	5.4901	-0.2444	-1.0816	0.1290	0.7778	0.5334	2.3495	14.1670	9.7165
8	5.4677	-0.4369	-1.1486	0.1433	0.4287	0.4812	2.6216	7.8415	8.8003
9	5.4243	-0.1671	-1.3416	0.2040	0.3620	0.7153	3.7605	6.6744	13.1866
10	5.3126	-0.5823	-1.7907	0.1070	0.3318	0.3043	2.0149	6.2457	5.7275
11	5.4546	0.2828	-1.3466	0.1636	0.4545	0.5229	2.9986	8.3322	9.5865
12	5.5975	0.8006	-0.6190	0.1734	0.6131	0.9214	3.0983	10.9537	16.4614

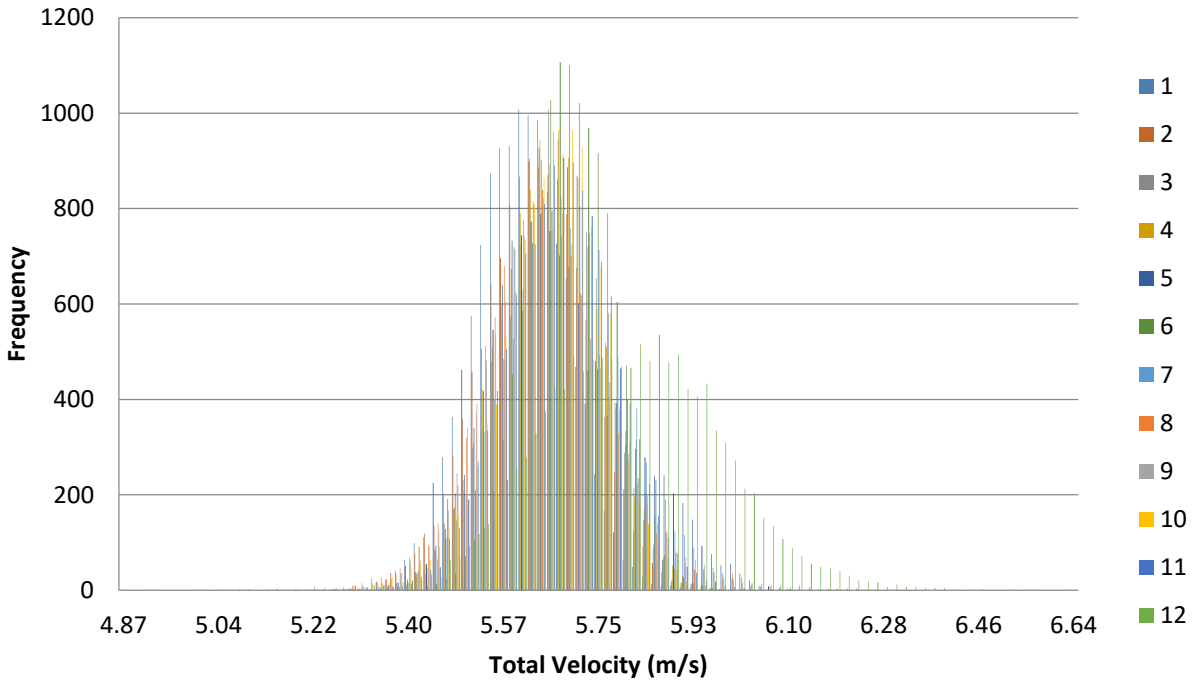


Figure 1. Velocity histogram for each interval (100 bins).

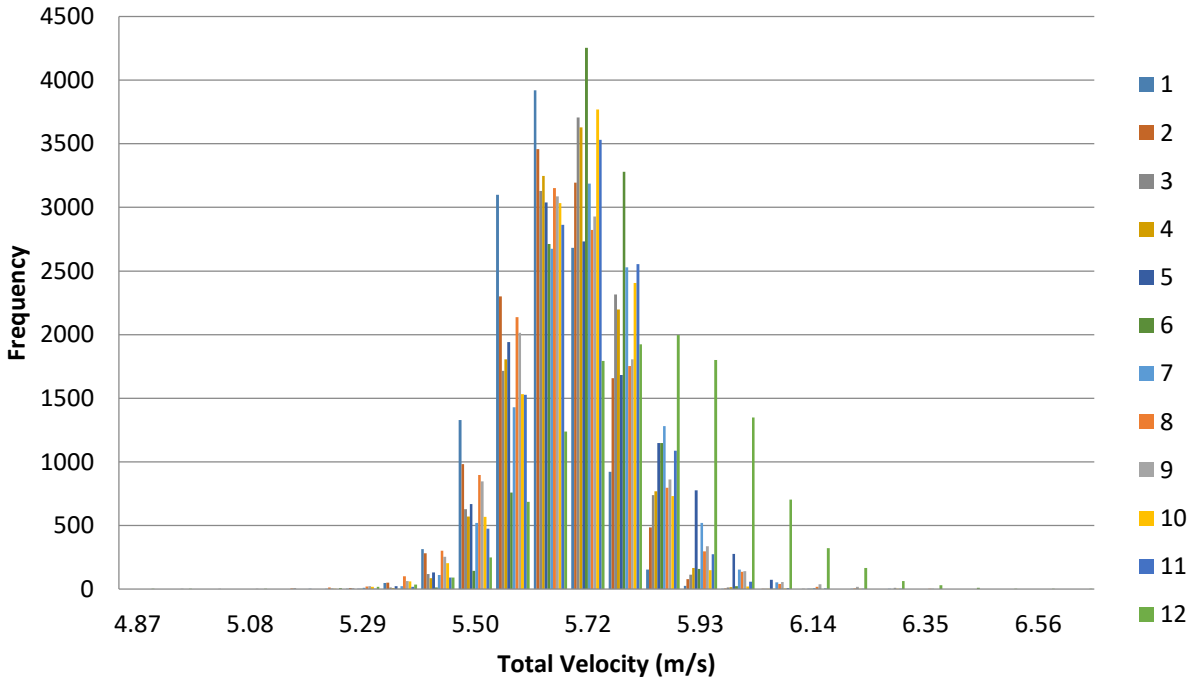
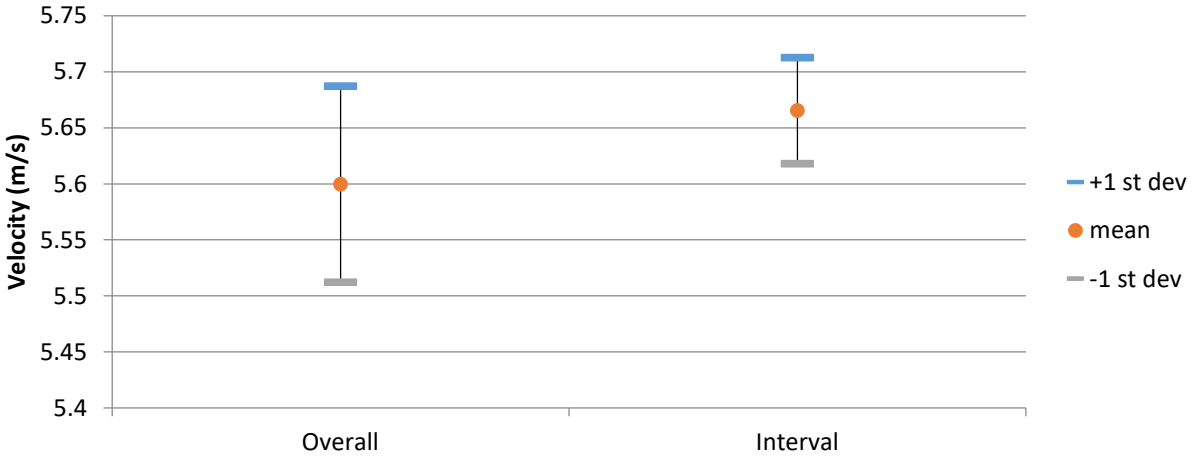
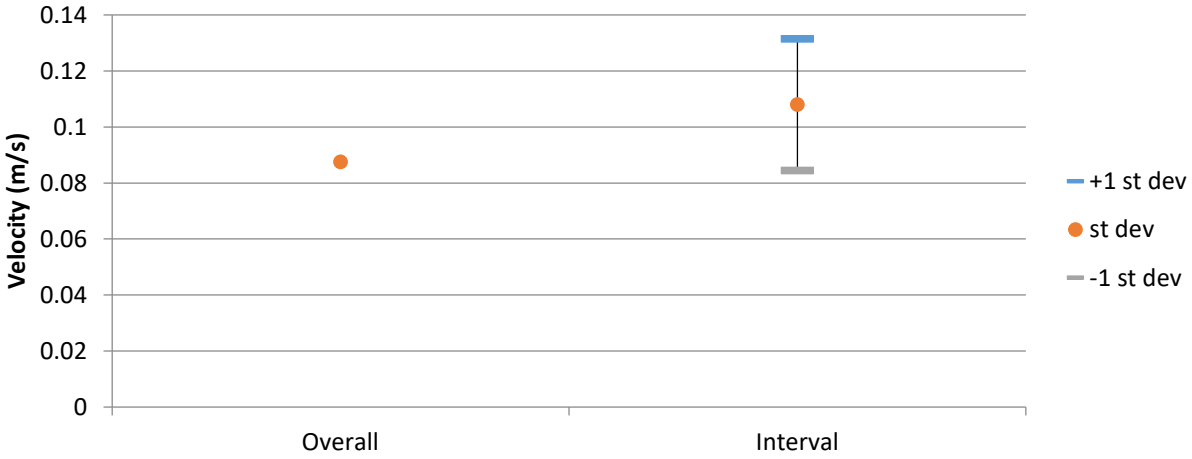


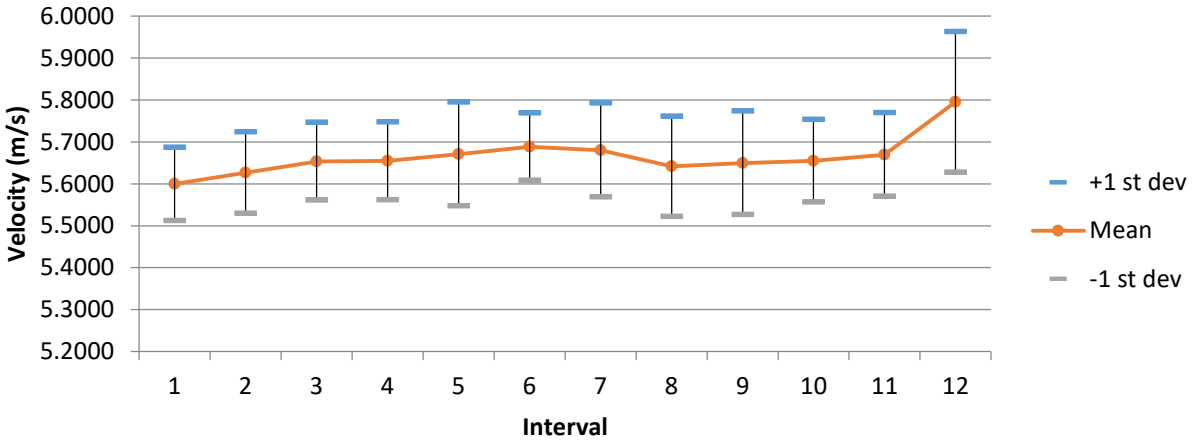
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 314
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 11-Sep-13 First Sample Time: 08:55:55.953

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	9.6677	12.7355	11.0353	0.2602
u	9.0000	12.3000	10.6563	0.2651
v	-4.4600	5.5200	-0.1796	1.2488
w	-5.5100	1.7100	-2.3657	1.0149

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	12.3103	10.1457	11.0729	0.3061	2.7640
2	11.9194	9.9139	10.9687	0.2233	2.0360
3	12.2115	9.7928	11.2031	0.3043	2.7158
4	12.7355	9.8609	11.0573	0.2949	2.6673
5	11.8179	10.0092	10.9099	0.2037	1.8676
6	11.9310	10.3247	11.1631	0.2195	1.9665
7	12.1408	9.6677	11.0551	0.2741	2.4795
8	12.2089	9.9636	11.0332	0.2324	2.1064
9	11.6755	10.1462	10.9985	0.1799	1.6358
10	11.8034	10.0591	10.9108	0.2023	1.8540
11	12.1148	10.2004	11.0824	0.2444	2.2052
12	11.9149	10.0860	10.9688	0.2175	1.9829
		Average	11.0353	0.2419	
		St Dev	0.0907	0.0429	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.7337	1.0326	-1.5531	0.2640	1.6214	1.1459	2.4595	15.1058	10.6759
2	10.7766	0.9305	-1.0475	0.2451	1.2354	0.8230	2.2743	11.4639	7.6367
3	10.7802	-1.5139	-2.2663	0.3035	0.7400	1.1496	2.8155	6.8643	10.6635
4	10.6216	-1.5028	-2.1484	0.2823	1.3481	0.8726	2.6576	12.6923	8.2157
5	10.6024	0.1699	-2.3930	0.2578	0.4365	0.8016	2.4314	4.1166	7.5604
6	10.7429	0.3716	-2.8445	0.2462	0.6552	0.7304	2.2915	6.0992	6.7993
7	10.6528	-0.6671	-2.5102	0.2628	1.0264	0.9701	2.4673	9.6346	9.1062
8	10.5888	-0.2078	-2.8687	0.2564	0.8224	0.8056	2.4216	7.7671	7.6078
9	10.5201	-0.2842	-3.1486	0.2009	0.3177	0.4385	1.9094	3.0196	4.1679
10	10.6139	0.1181	-2.3102	0.2026	0.7559	0.6844	1.9090	7.1221	6.4485
11	10.6974	0.3668	-2.6004	0.2597	0.8884	0.8311	2.4278	8.3044	7.7690
12	10.5457	-0.9668	-2.6965	0.2111	0.6841	0.6568	2.0017	6.4871	6.2285

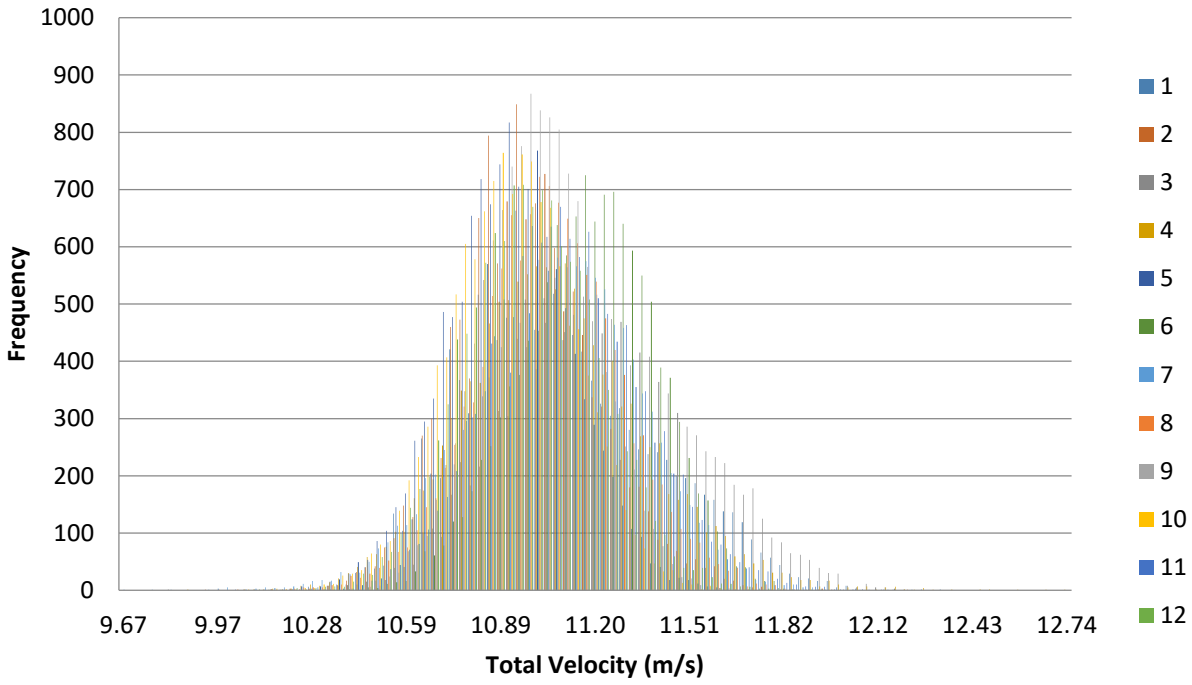


Figure 1. Velocity histogram for each interval (100 bins).

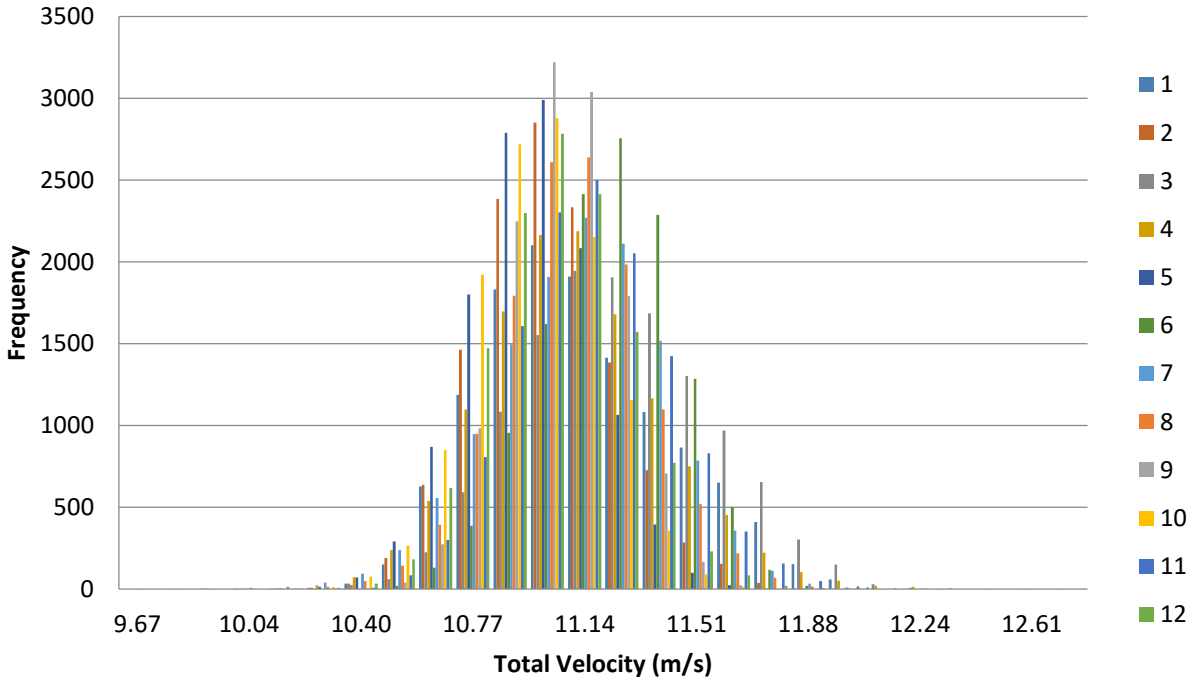
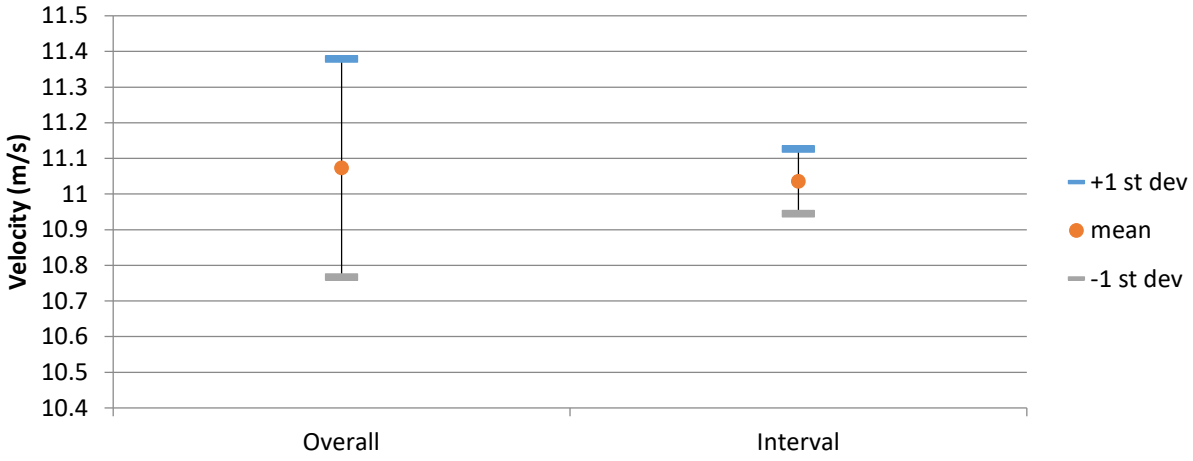
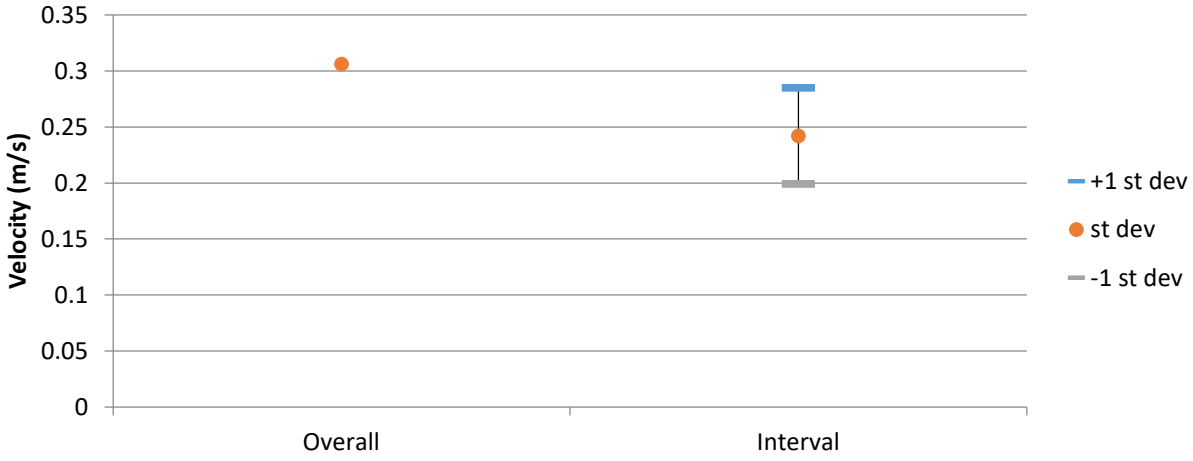


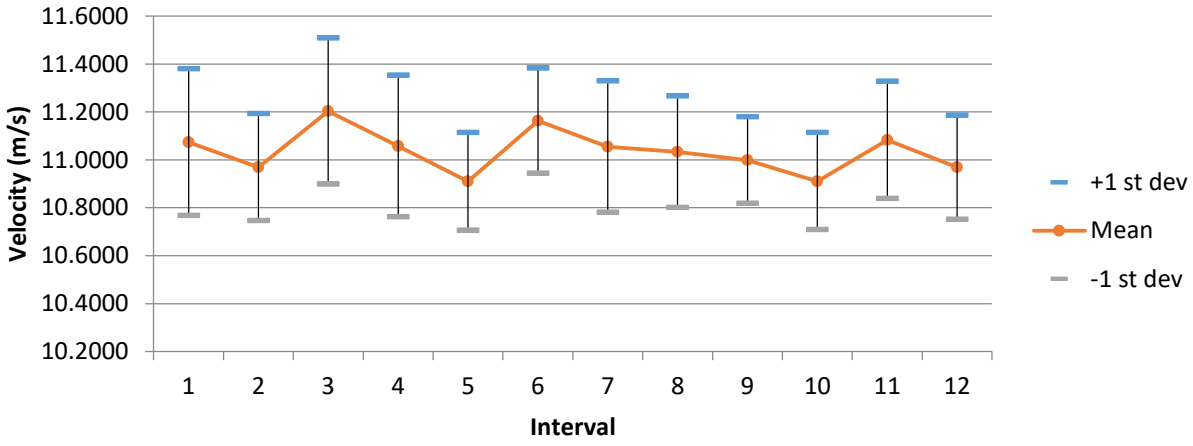
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 315
Blockage Condition: All Buildings
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 11-Sep-13 First Sample Time: 09:00:10.390

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	9.7371	12.5169	10.9929	0.2349
u	9.1200	12.0000	10.6041	0.2696
v	-3.4900	2.9900	-0.2205	0.7544
w	-5.8000	2.0400	-2.6281	0.9252

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.6687	10.2670	10.9746	0.1855	1.6902
2	11.6610	10.0941	10.8902	0.2119	1.9457
3	11.8384	10.2143	10.9438	0.1828	1.6699
4	11.6449	10.2264	11.0019	0.1976	1.7959
5	11.7578	10.2426	10.9922	0.2104	1.9138
6	12.1776	9.7371	10.9404	0.2211	2.0210
7	11.9573	10.1678	10.8963	0.2057	1.8883
8	12.3943	10.1621	10.9088	0.2108	1.9324
9	12.5169	10.3836	11.2853	0.3224	2.8565
10	11.6975	10.3064	11.0090	0.1751	1.5909
11	12.0431	10.1898	10.9920	0.1967	1.7897
12	11.7444	10.3686	11.0806	0.1771	1.5986
		Average	10.9929	0.2081	
		St Dev	0.1070	0.0390	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.5203	-0.6903	-2.8751	0.2291	0.6299	0.7791	2.1779	5.9874	7.4054
2	10.5889	-0.4634	-2.0310	0.2999	0.9392	1.0978	2.8324	8.8697	10.3678
3	10.5214	0.1586	-2.8778	0.2199	0.6408	0.5782	2.0902	6.0904	5.4951
4	10.5658	0.3429	-2.8609	0.2273	0.7763	0.6998	2.1517	7.3470	6.6229
5	10.3670	0.1307	-3.5125	0.3093	0.8106	0.5372	2.9838	7.8185	5.1819
6	10.7702	-0.3748	-1.4073	0.2393	0.7893	0.9702	2.2220	7.3281	9.0086
7	10.5262	-0.2078	-2.6153	0.2281	0.7095	0.7292	2.1668	6.7405	6.9276
8	10.6798	-0.6335	-1.9174	0.2247	0.5055	0.7775	2.1043	4.7333	7.2800
9	10.7139	-0.3257	-3.3718	0.3340	0.6913	0.7800	3.1177	6.4525	7.2798
10	10.6580	0.1126	-2.6392	0.1977	0.6128	0.4928	1.8545	5.7500	4.6235
11	10.5886	-0.6220	-2.7992	0.2083	0.3133	0.6178	1.9668	2.9585	5.8342
12	10.7485	-0.0742	-2.6295	0.1826	0.4302	0.3786	1.6986	4.0022	3.5220

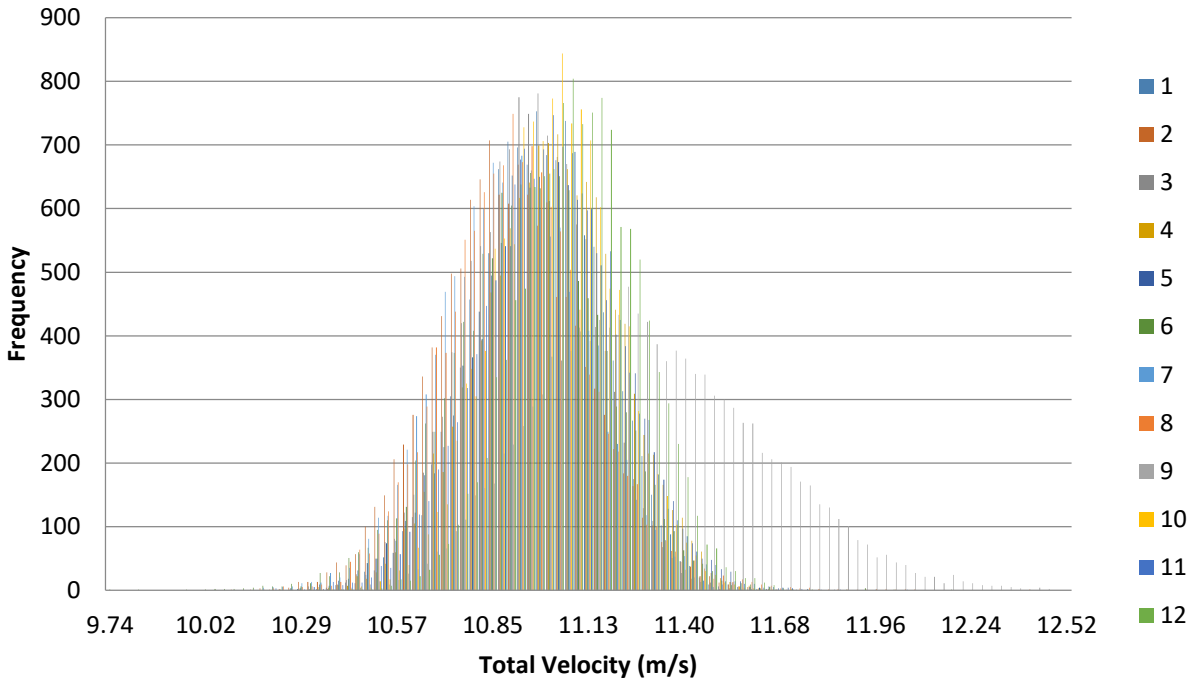


Figure 1. Velocity histogram for each interval (100 bins).

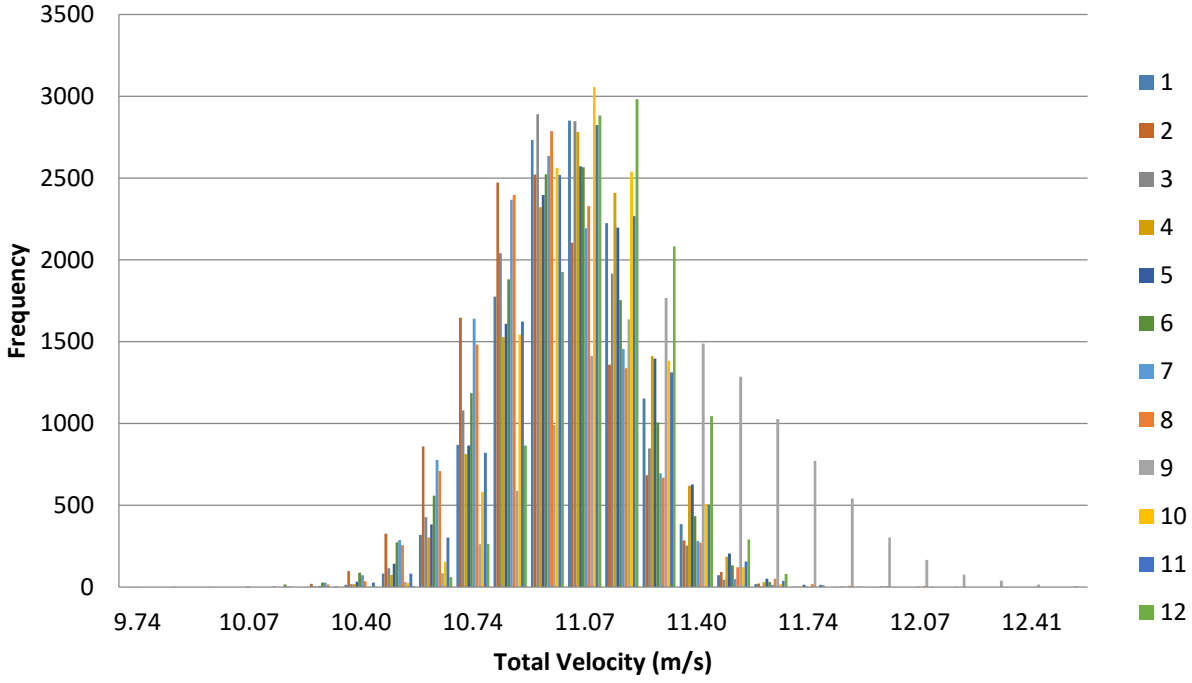
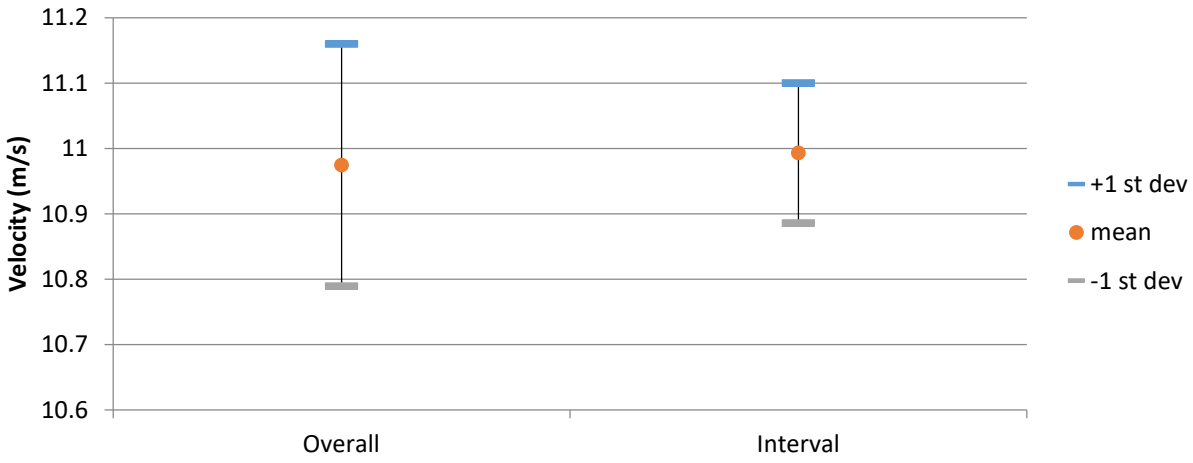
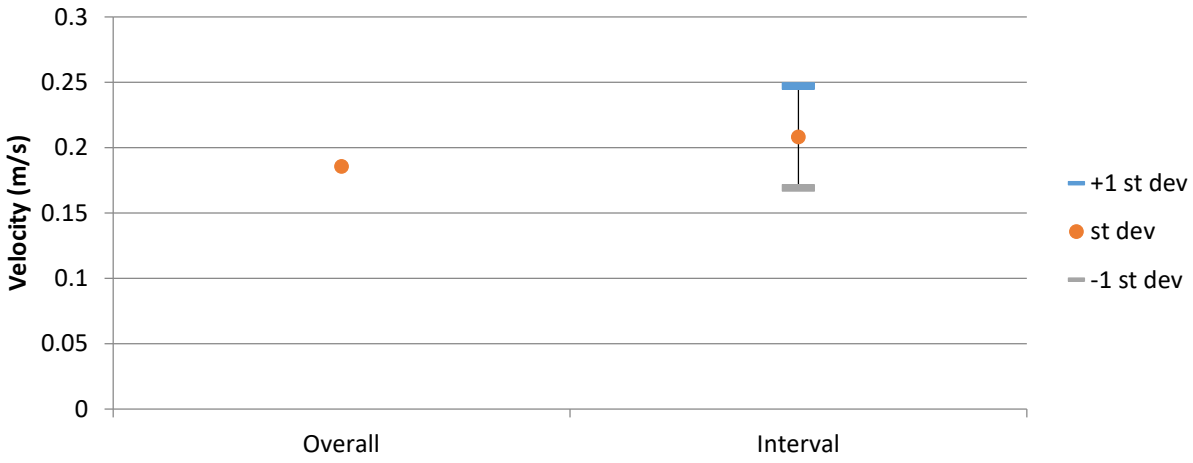


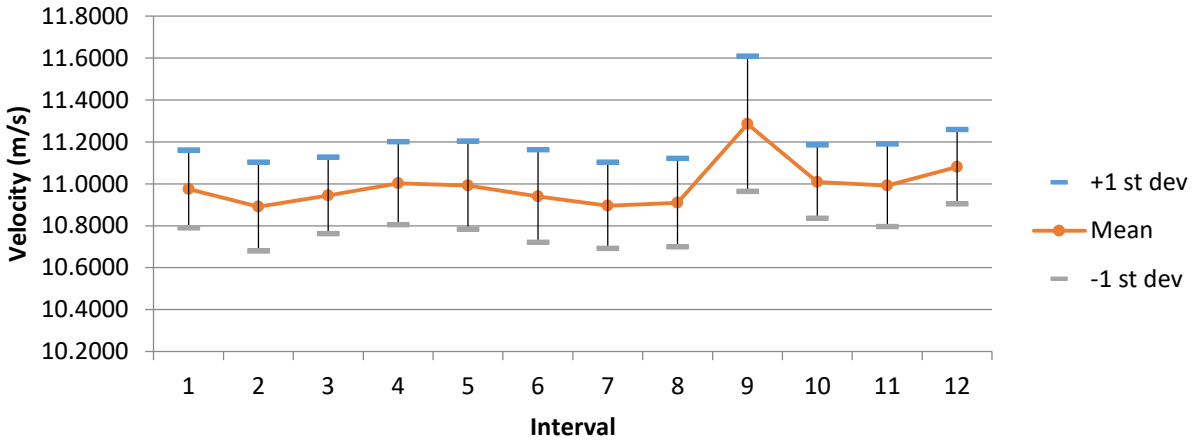
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 316
Blockage Condition: All Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 11-Sep-13 First Sample Time: 09:07:11.234

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	4.8679	6.4504	5.6281	0.1040
u	4.3700	6.3800	5.4231	0.1785
v	-1.8500	2.1800	0.1958	0.4913
w	-3.3700	0.6530	-1.2775	0.5765

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.8975	5.3030	5.5937	0.0708	1.2666
2	5.8769	5.3017	5.5927	0.0763	1.3646
3	5.9620	5.2924	5.5953	0.0774	1.3834
4	6.1535	4.9817	5.6325	0.0958	1.7000
5	6.0294	5.2770	5.5933	0.0793	1.4182
6	6.2267	5.2275	5.6747	0.1111	1.9583
7	6.1539	5.2661	5.6695	0.0929	1.6382
8	6.4504	5.1971	5.6838	0.1569	2.7596
9	6.3202	4.8679	5.6268	0.0994	1.7664
10	6.0882	5.1957	5.6134	0.1071	1.9084
11	5.9756	5.2894	5.6386	0.0999	1.7724
12	6.0599	5.3233	5.6228	0.0921	1.6383
		Average	5.6281	0.0966	
		St Dev	0.0331	0.0229	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.4881	0.1009	-1.0613	0.0775	0.1188	0.1360	1.4115	2.1649	2.4788
2	5.4652	0.1347	-1.1664	0.0724	0.0955	0.1528	1.3241	1.7469	2.7956
3	5.4438	-0.2877	-1.2309	0.0841	0.2001	0.1823	1.5449	3.6749	3.3495
4	5.4384	0.2047	-1.3421	0.1468	0.3989	0.3665	2.6998	7.3342	6.7390
5	5.4997	-0.1610	-0.9655	0.0892	0.1886	0.2081	1.6217	3.4287	3.7837
6	5.5210	1.0142	-0.5971	0.1259	0.4490	0.3617	2.2800	8.1321	6.5506
7	5.6247	0.2093	-0.4185	0.1008	0.4149	0.3367	1.7914	7.3772	5.9864
8	5.3156	0.1778	-1.5603	0.3369	0.8198	0.9072	6.3387	15.4230	17.0667
9	5.3865	0.1931	-1.5562	0.1179	0.3254	0.2793	2.1893	6.0408	5.1857
10	5.2808	0.4165	-1.8141	0.1424	0.2648	0.2824	2.6960	5.0150	5.3475
11	5.3243	0.3604	-1.7725	0.1355	0.3335	0.2336	2.5452	6.2642	4.3877
12	5.2896	-0.0130	-1.8446	0.1374	0.3763	0.2840	2.5969	7.1148	5.3694

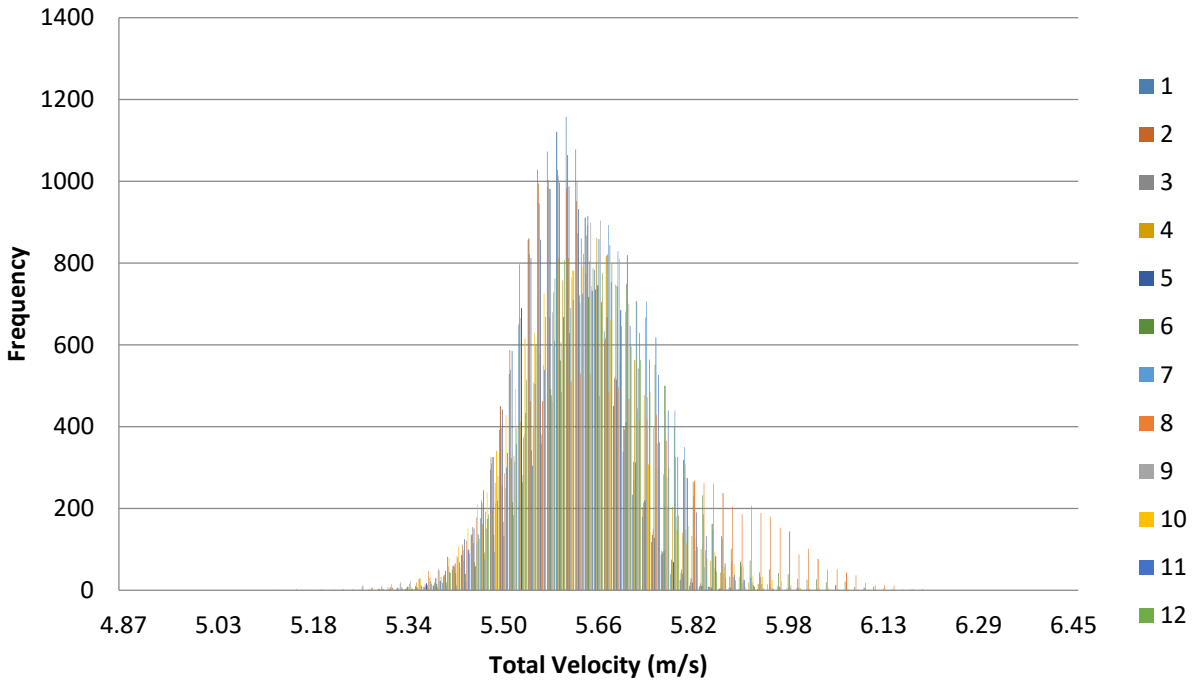


Figure 1. Velocity histogram for each interval (100 bins).

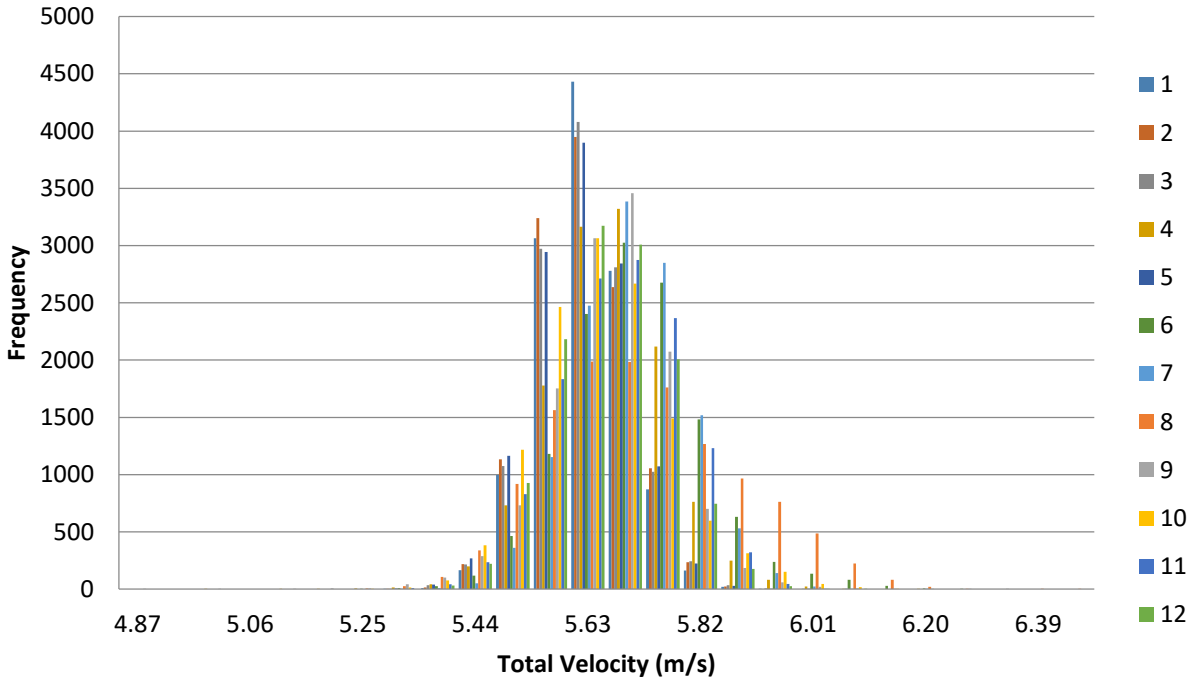
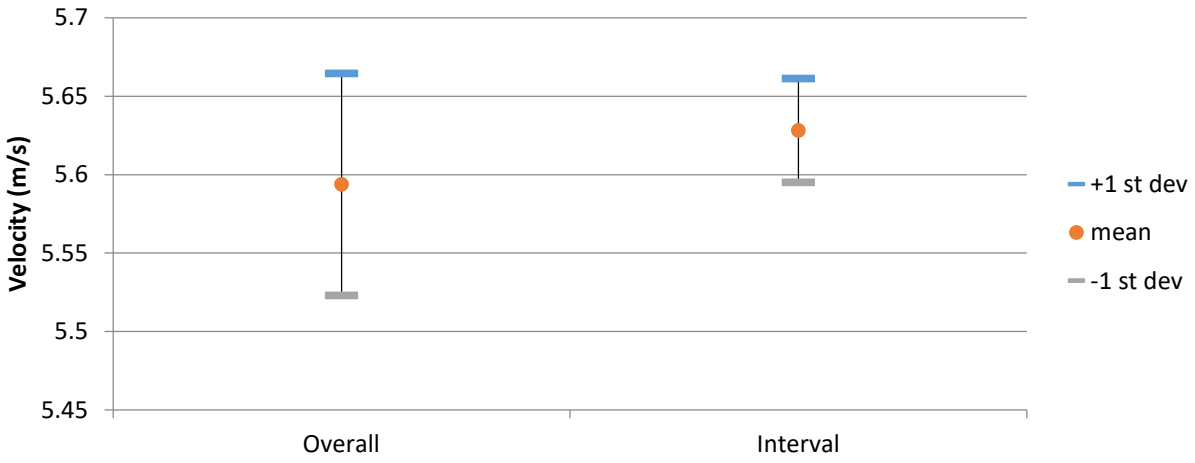
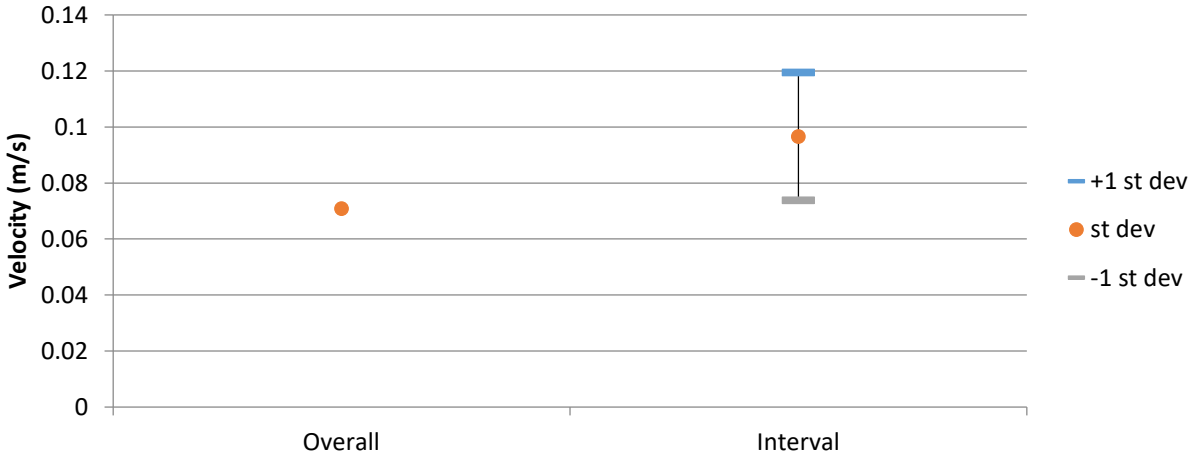


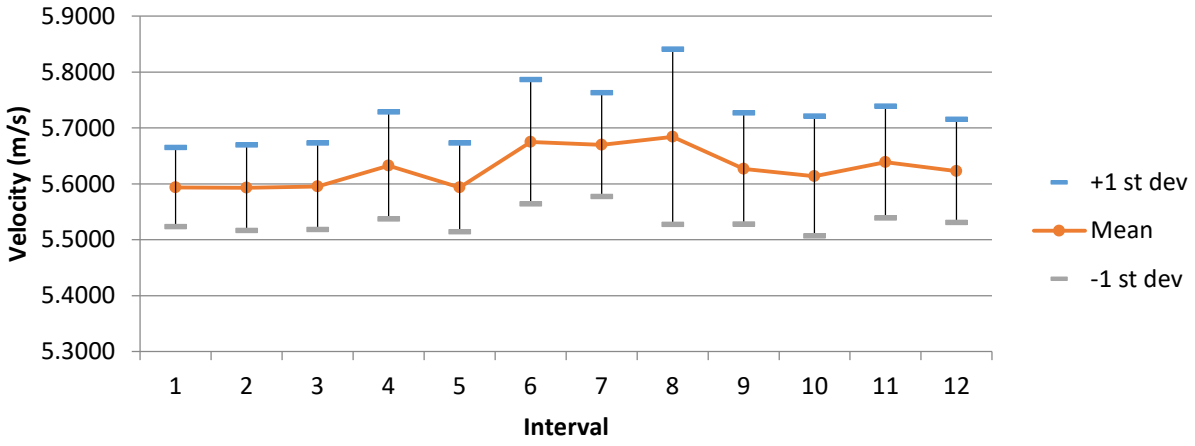
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 317
Blockage Condition: Existing Buildings
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 11-Sep-13 First Sample Time: 09:19:57.796

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.1419	6.6057	5.7072	0.1123
u	4.6000	6.3800	5.4540	0.1663
v	-2.5900	2.3900	-0.1964	0.5773
w	-3.2200	0.5840	-1.4622	0.5480

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	6.2127	5.3491	5.7904	0.1169	2.0185
2	6.3883	5.2509	5.7259	0.1213	2.1192
3	6.5878	5.2719	5.7355	0.1227	2.1392
4	6.6057	5.3088	5.6909	0.0855	1.5027
5	6.1528	5.2132	5.6693	0.0972	1.7141
6	5.9165	5.2957	5.6204	0.0850	1.5124
7	6.1401	5.3102	5.6661	0.0988	1.7430
8	6.1585	5.2303	5.7163	0.0992	1.7359
9	6.1634	5.1991	5.7250	0.0963	1.6818
10	6.0650	5.1419	5.7416	0.0906	1.5773
11	6.1601	5.2743	5.7219	0.1101	1.9248
12	6.3598	5.2351	5.6824	0.1155	2.0331
		Average	5.7071	0.1033	
		St Dev	0.0441	0.0135	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.6340	0.4379	-1.0821	0.1254	0.4052	0.5084	2.2255	7.1916	9.0240
2	5.5148	-0.7821	-1.0824	0.1656	0.5451	0.5292	3.0026	9.8844	9.5962
3	5.4171	-0.6950	-1.6233	0.1596	0.4106	0.5039	2.9463	7.5806	9.3023
4	5.4160	-0.3040	-1.6895	0.0964	0.2327	0.2251	1.7798	4.2972	4.1555
5	5.3854	-0.4782	-1.5961	0.1444	0.4448	0.3910	2.6814	8.2600	7.2595
6	5.3845	-0.0869	-1.4766	0.0921	0.5670	0.2912	1.7097	10.5300	5.4073
7	5.3017	0.3744	-1.8916	0.1787	0.3716	0.3447	3.3700	7.0088	6.5015
8	5.4420	-0.1180	-1.6546	0.1408	0.3596	0.4114	2.5867	6.6079	7.5606
9	5.5122	0.0939	-1.4047	0.1182	0.4662	0.4328	2.1446	8.4584	7.8509
10	5.4882	-0.2263	-1.5027	0.1816	0.3543	0.6216	3.3098	6.4556	11.3262
11	5.5292	-0.5816	-1.1262	0.1361	0.4742	0.5749	2.4615	8.5769	10.3975
12	5.4239	0.0099	-1.4144	0.1560	0.5062	0.7767	2.8764	9.3320	14.3190

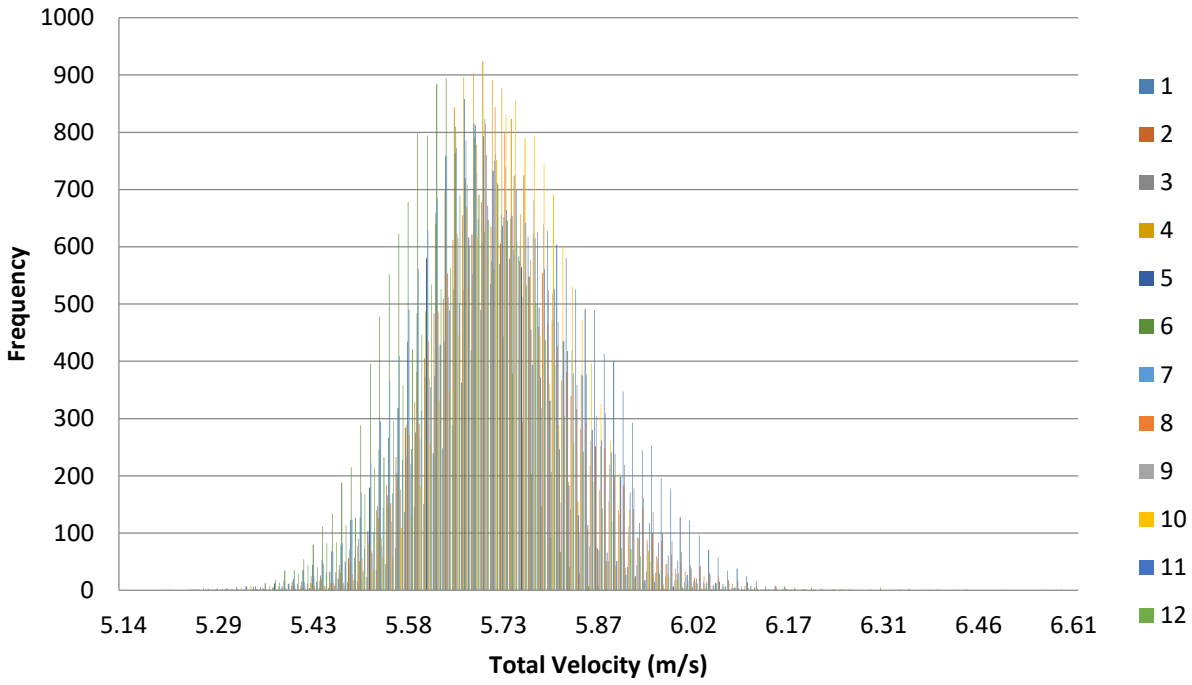


Figure 1. Velocity histogram for each interval (100 bins).

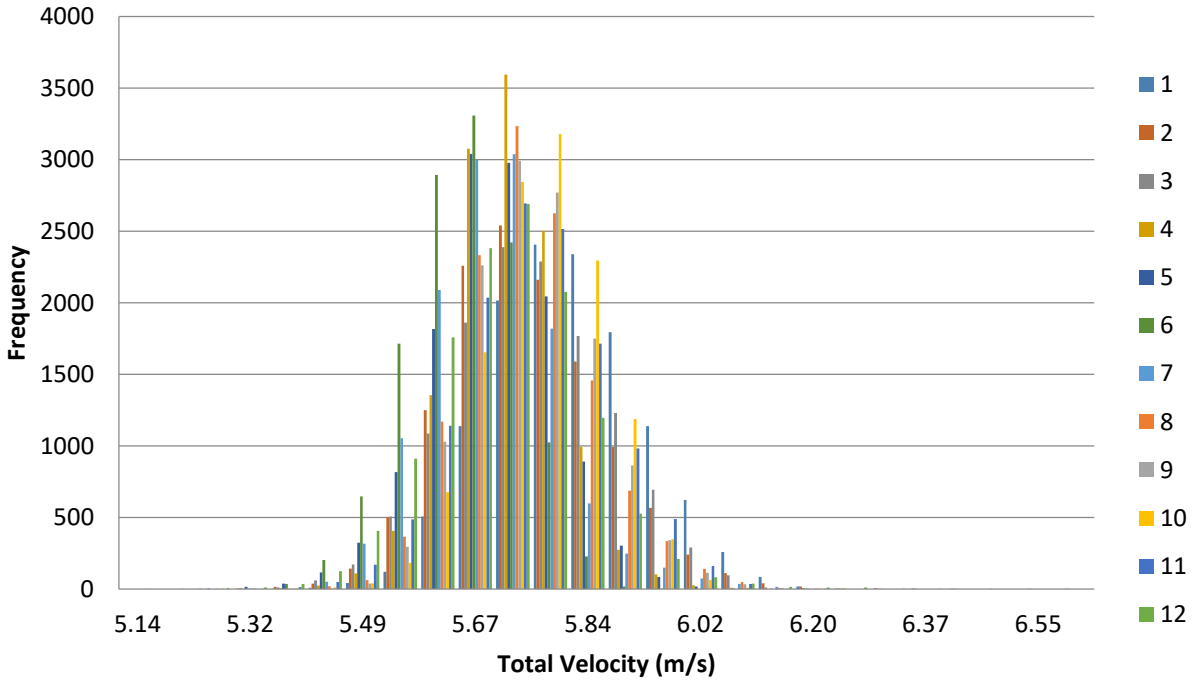
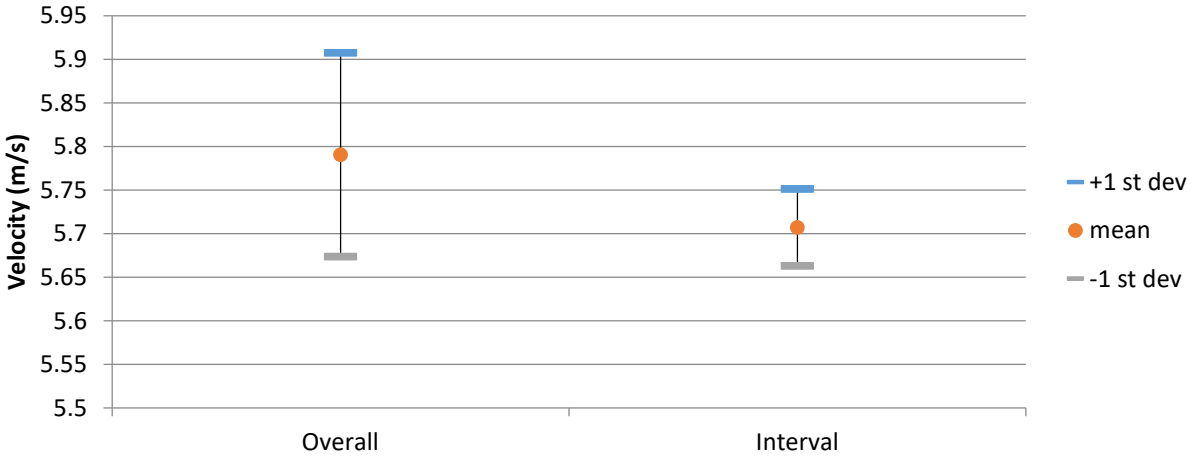
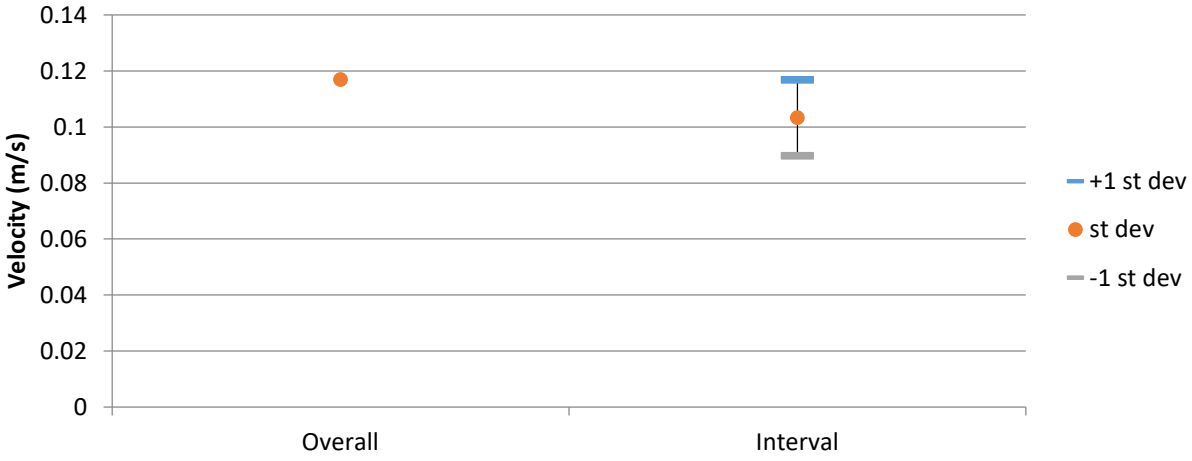


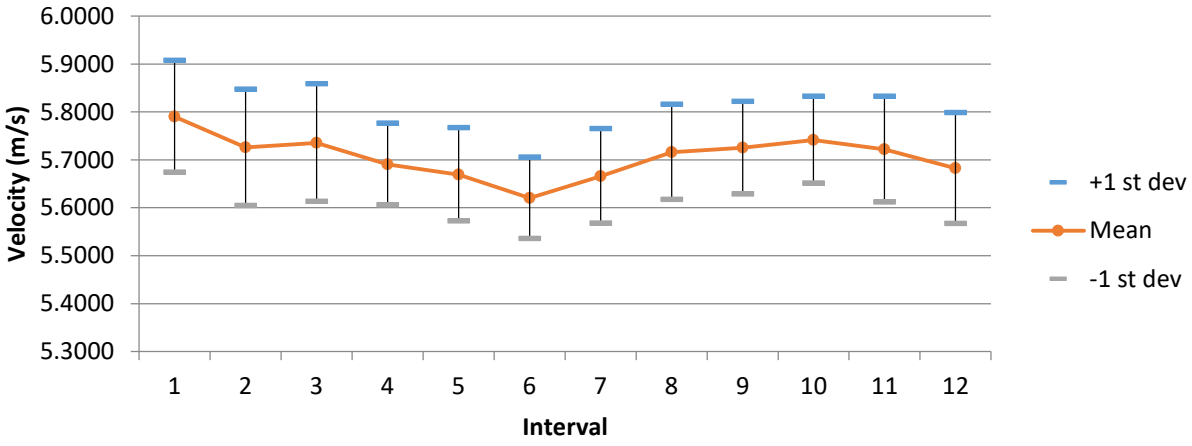
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 318
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 11-Sep-13 First Sample Time: 09:25:19.671

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	9.2094	12.3863	10.9155	0.2229
u	8.8700	12.2000	10.5660	0.2906
v	-3.7900	3.1100	-0.4747	0.9444
w	-5.8000	1.6900	-2.3051	1.0204

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.7008	10.1107	10.8714	0.2107	1.9378
2	12.2450	9.2094	10.8979	0.2329	2.1368
3	11.8364	9.9062	10.9155	0.2125	1.9466
4	11.8954	9.9203	10.8592	0.2001	1.8430
5	11.9013	9.7311	10.9357	0.2331	2.1314
6	12.3863	9.9484	10.8649	0.2211	2.0351
7	11.6710	9.8580	10.8257	0.2053	1.8968
8	11.8681	10.2626	11.0057	0.2026	1.8408
9	12.1190	10.1000	10.9036	0.2083	1.9101
10	11.7009	10.2378	10.9344	0.2003	1.8316
11	12.1343	9.9351	11.0330	0.2371	2.1491
12	11.7914	10.1128	10.9391	0.2163	1.9772
		Average	10.9155	0.2150	
		St Dev	0.0599	0.0132	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.3165	0.2090	-3.2820	0.3359	0.4959	0.7927	3.2557	4.8072	7.6841
2	10.7033	-0.8230	-1.5500	0.2486	0.7440	0.7500	2.3224	6.9515	7.0071
3	10.5714	-0.7040	-2.3830	0.2455	0.7816	0.7705	2.3225	7.3932	7.2890
4	10.6260	-0.2235	-1.8741	0.2176	0.7236	0.9578	2.0480	6.8094	9.0137
5	10.6574	-0.7492	-1.6636	0.3250	1.1274	1.1652	3.0499	10.5790	10.9337
6	10.6162	-0.5990	-1.8993	0.2610	0.8777	0.7657	2.4583	8.2677	7.2128
7	10.5265	-1.4684	-1.8770	0.2303	0.4016	0.7318	2.1877	3.8147	6.9518
8	10.7235	0.0774	-2.0578	0.2569	0.8531	1.0675	2.3956	7.9553	9.9548
9	10.5615	0.0335	-2.3127	0.3292	0.9820	0.9824	3.1168	9.2984	9.3018
10	10.4464	-0.2098	-3.0158	0.2724	0.9245	0.6379	2.6072	8.8499	6.1066
11	10.5459	-0.3045	-2.9718	0.2662	1.0194	0.7301	2.5245	9.6661	6.9227
12	10.4980	-0.9356	-2.7739	0.2087	0.5699	0.7515	1.9882	5.4288	7.1587

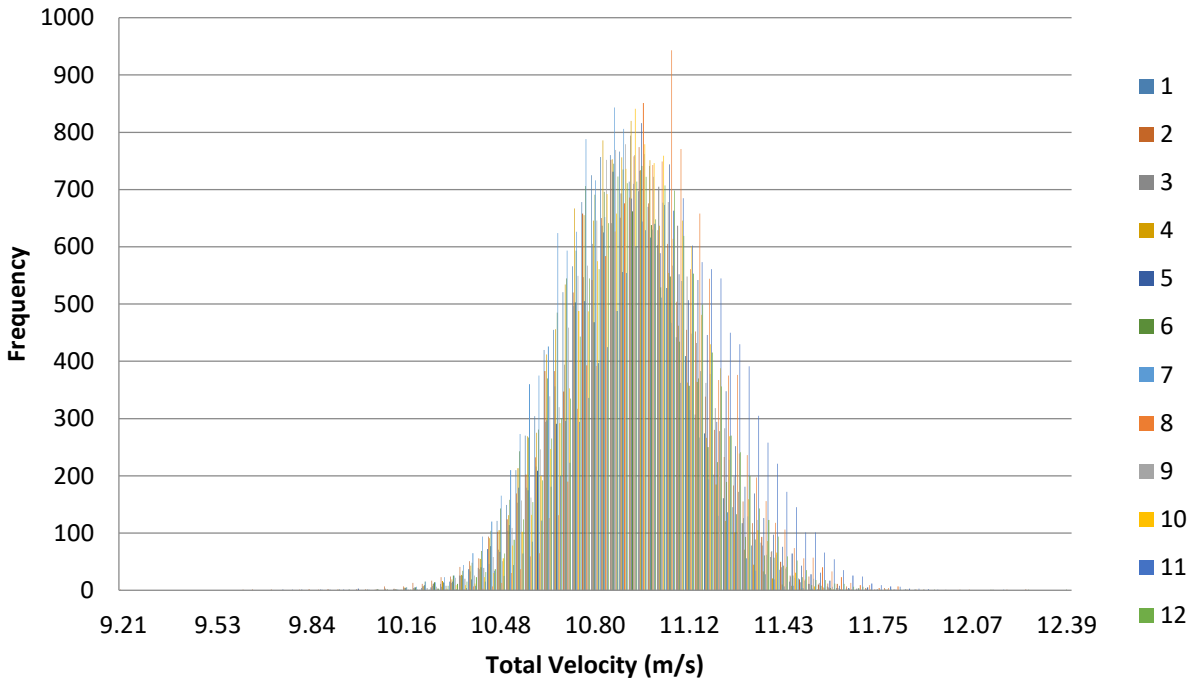


Figure 1. Velocity histogram for each interval (100 bins).

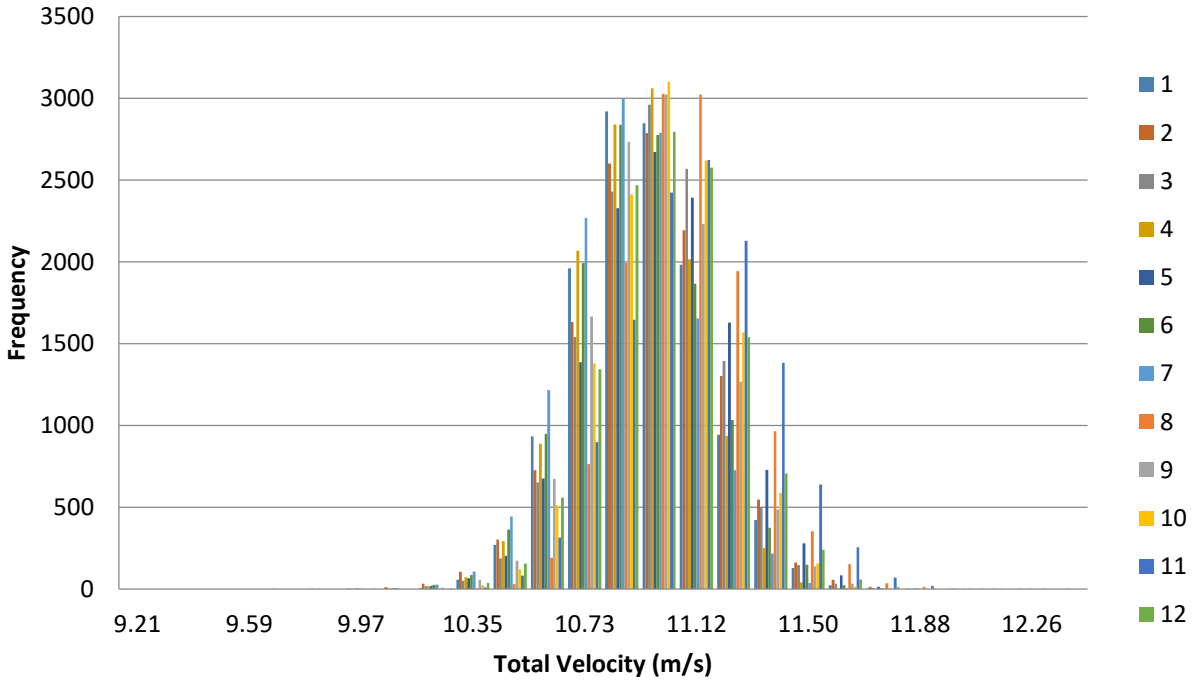
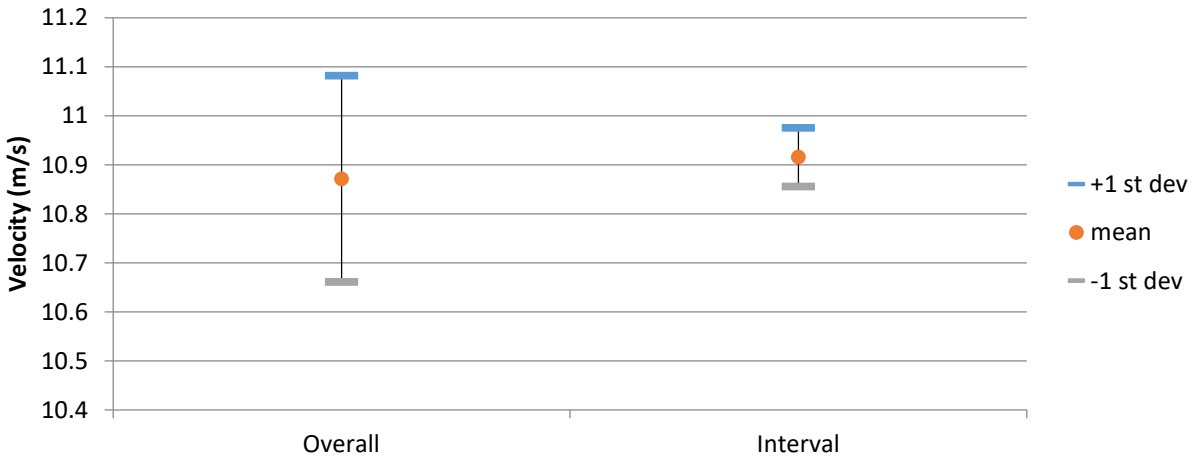
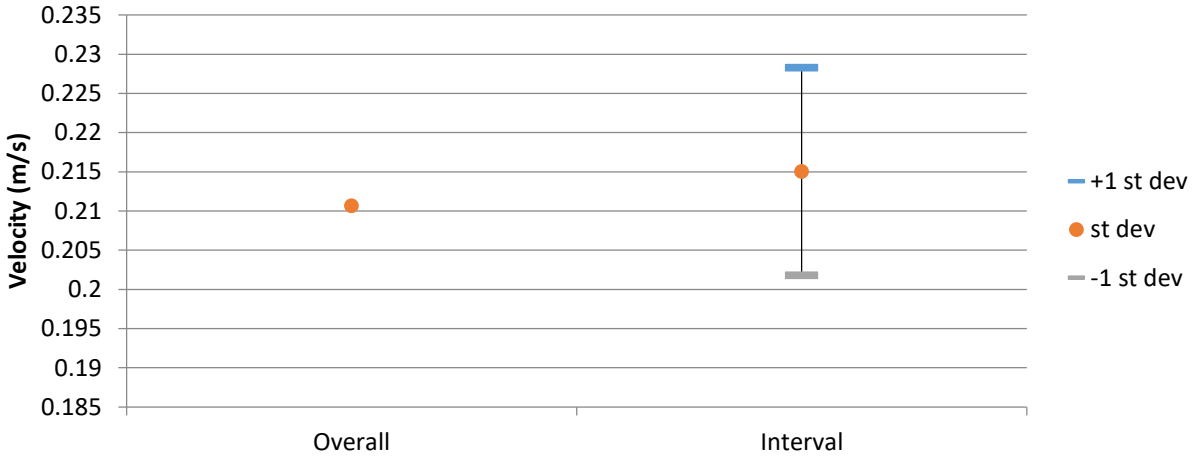


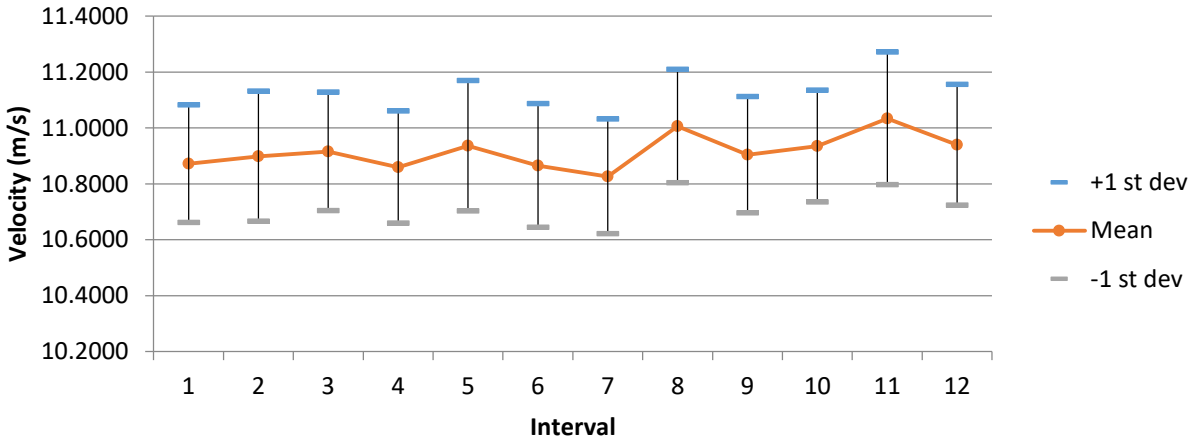
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 319
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 11-Sep-13 First Sample Time: 09:36:51.515

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	9.8224	12.0167	10.9549	0.1972
u	9.1600	11.6000	10.5573	0.2506
v	-2.6600	2.2600	-0.2672	0.6863
w	-5.2800	-0.3510	-2.7258	0.7470

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.6239	10.3520	11.0019	0.1679	1.5262
2	11.7015	10.3068	11.0261	0.1904	1.7267
3	12.0167	10.0962	10.9141	0.2019	1.8498
4	11.5775	10.2969	10.9238	0.1652	1.5124
5	11.6875	10.2582	10.9288	0.1840	1.6839
6	11.8188	10.2262	10.9187	0.1937	1.7739
7	11.5037	10.2065	10.8648	0.1768	1.6273
8	11.5649	9.8224	10.9127	0.1934	1.7725
9	11.5761	10.2611	10.9449	0.1783	1.6288
10	11.9210	10.2805	11.0399	0.1992	1.8040
11	11.6534	10.3223	11.0072	0.1793	1.6294
12	11.7766	10.2027	10.9764	0.2412	2.1976
		Average	10.9549	0.1893	
		St Dev	0.0542	0.0201	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.6663	0.0105	-2.6452	0.1884	0.3655	0.3661	1.7659	3.4267	3.4319
2	10.7465	-0.5638	-2.2716	0.2029	0.4613	0.6273	1.8878	4.2924	5.8373
3	10.5727	-0.7019	-2.5252	0.1911	0.4480	0.5183	1.8077	4.2373	4.9026
4	10.5235	-0.8614	-2.7478	0.1688	0.4216	0.3405	1.6036	4.0064	3.2354
5	10.4880	-0.1786	-2.9640	0.2180	0.5352	0.5691	2.0783	5.1031	5.4263
6	10.4926	-0.6405	-2.8445	0.2038	0.5226	0.5869	1.9425	4.9811	5.5931
7	10.6495	-0.5515	-1.9357	0.2098	0.5685	0.4949	1.9699	5.3382	4.6473
8	10.6349	0.2980	-2.2088	0.2466	0.5467	0.8341	2.3190	5.1406	7.8427
9	10.5447	0.2401	-2.8280	0.2042	0.5305	0.5051	1.9367	5.0309	4.7900
10	10.6406	-0.6084	-2.6511	0.2542	0.6697	0.8867	2.3887	6.2943	8.3332
11	10.4928	0.2024	-3.2147	0.2027	0.6906	0.4456	1.9320	6.5819	4.2467
12	10.2354	0.1487	-3.8740	0.2889	0.7198	0.3817	2.8224	7.0326	3.7292

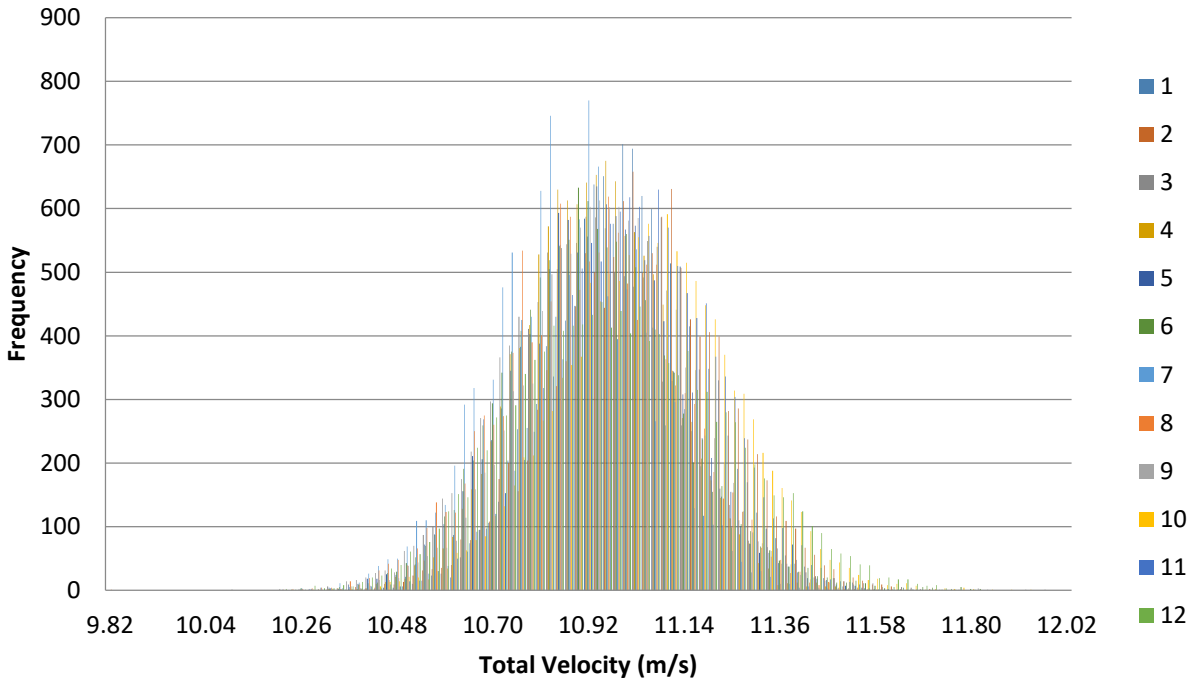


Figure 1. Velocity histogram for each interval (100 bins).

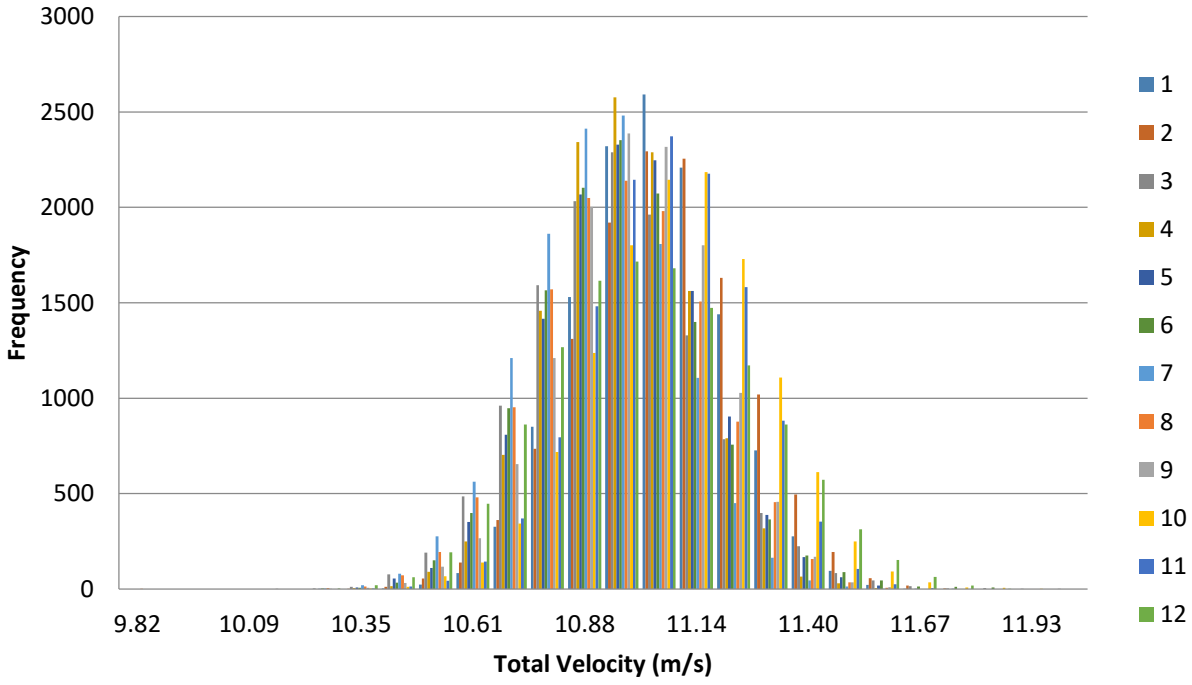
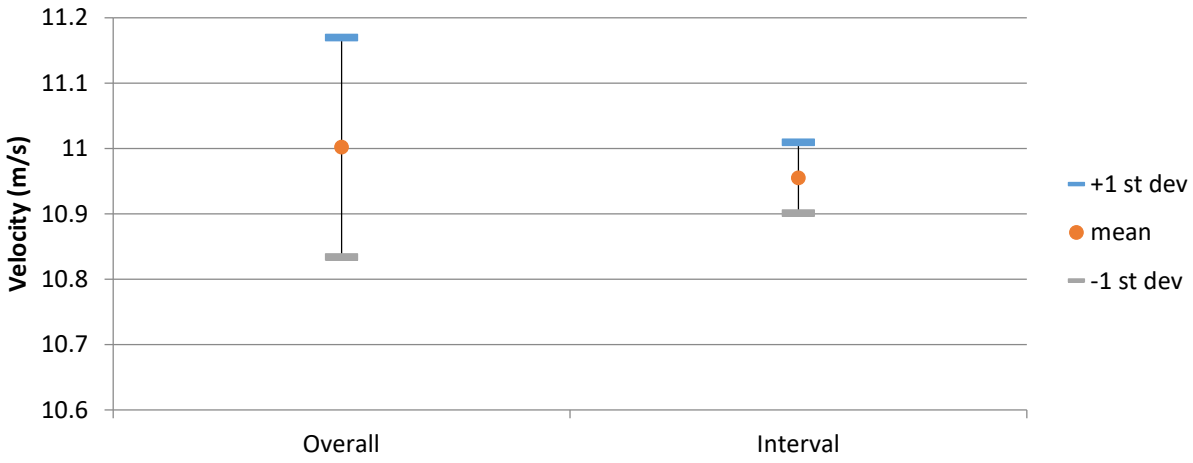
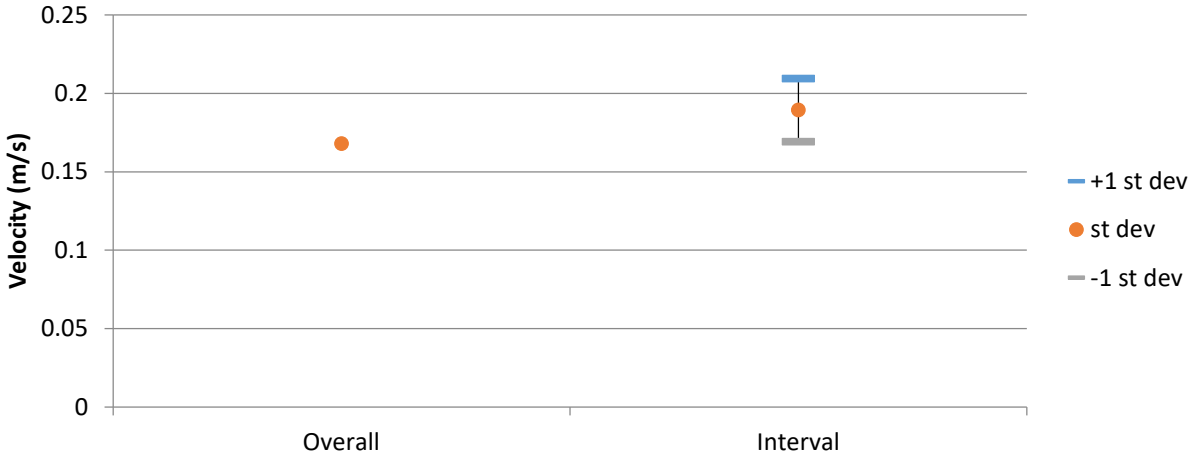


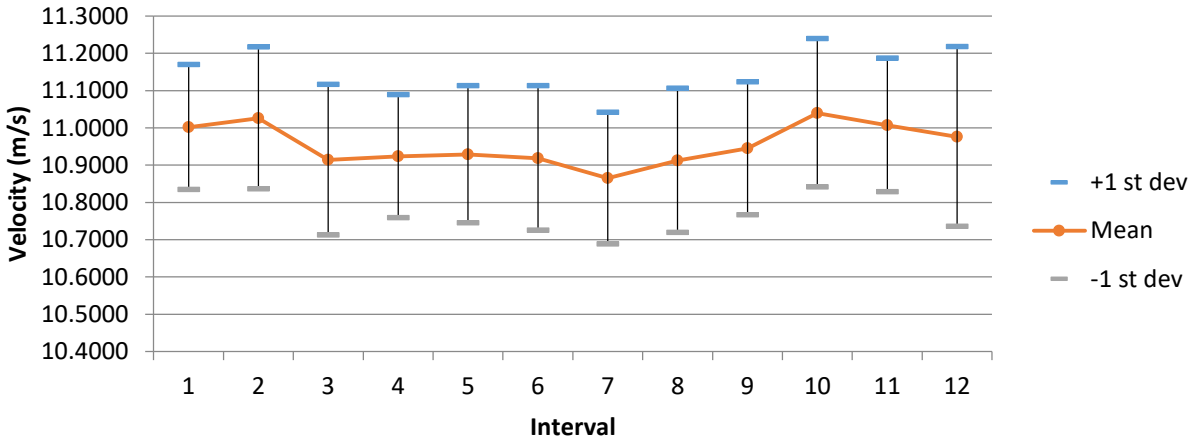
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 320
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 11-Sep-13 First Sample Time: 09:45:01.093

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	4.2318	6.9624	5.6808	0.1454
u	4.0800	6.7100	5.4984	0.1796
v	-2.7600	2.0400	-0.1828	0.5689
w	-3.0700	1.7100	-1.0720	0.7220

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	6.0226	5.0967	5.5950	0.0938	1.6767
2	6.0897	5.3645	5.6775	0.0926	1.6303
3	5.9488	5.3191	5.6373	0.0847	1.5028
4	5.9580	5.2700	5.6489	0.0966	1.7093
5	6.2784	5.1867	5.7530	0.1564	2.7193
6	6.2913	4.2318	5.6593	0.1322	2.3360
7	6.0027	5.1648	5.6339	0.1039	1.8434
8	6.5329	4.8390	5.6327	0.1281	2.2744
9	6.1885	4.8729	5.6168	0.1053	1.8748
10	6.4808	4.9079	5.7055	0.1455	2.5498
11	6.9624	5.2144	5.9134	0.1383	2.3387
12	6.5612	5.0217	5.6958	0.1414	2.4817
		Average	5.6808	0.1182	
		St Dev	0.0850	0.0246	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.4261	-0.4894	-1.1716	0.1064	0.3247	0.3755	1.9611	5.9842	6.9203
2	5.4226	0.1624	-1.5343	0.1851	0.3705	0.5347	3.4134	6.8322	9.8608
3	5.4188	-0.1353	-1.4855	0.1036	0.2855	0.3245	1.9123	5.2684	5.9882
4	5.4226	0.0026	-1.4776	0.1097	0.4806	0.2992	2.0238	8.8635	5.5182
5	5.4034	-0.7102	-1.6981	0.1906	0.4417	0.5532	3.5283	8.1739	10.2374
6	5.5053	-0.1191	-1.1136	0.1348	0.4618	0.5004	2.4493	8.3875	9.0897
7	5.4891	0.2748	-1.1437	0.0955	0.2301	0.4187	1.7399	4.1913	7.6271
8	5.4955	-0.0272	-0.8401	0.1873	0.5312	0.7207	3.4077	9.6654	13.1136
9	5.5601	-0.2522	-0.5238	0.1111	0.3177	0.4403	1.9980	5.7132	7.9192
10	5.6536	0.0280	0.3120	0.1487	0.5377	0.4480	2.6293	9.5105	7.9241
11	5.7506	-0.4532	-0.7543	0.1885	0.9347	0.4847	3.2777	16.2538	8.4286
12	5.4330	-0.4746	-1.4331	0.1484	0.5909	0.5422	2.7317	10.8752	9.9797

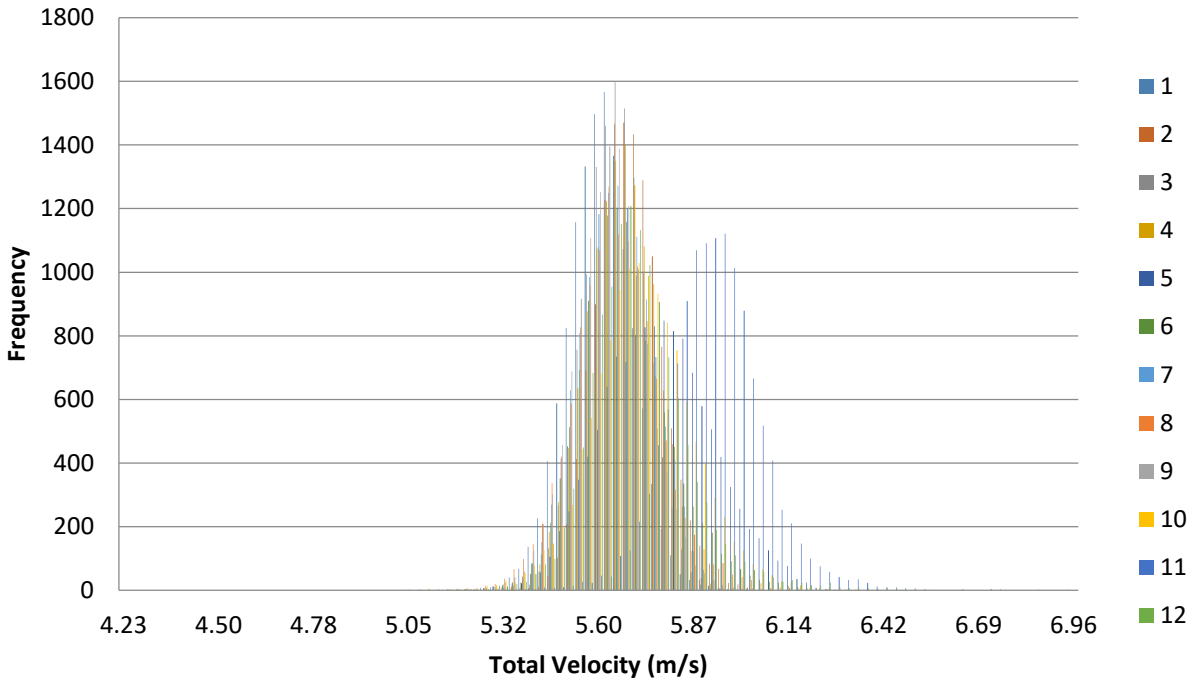


Figure 1. Velocity histogram for each interval (100 bins).

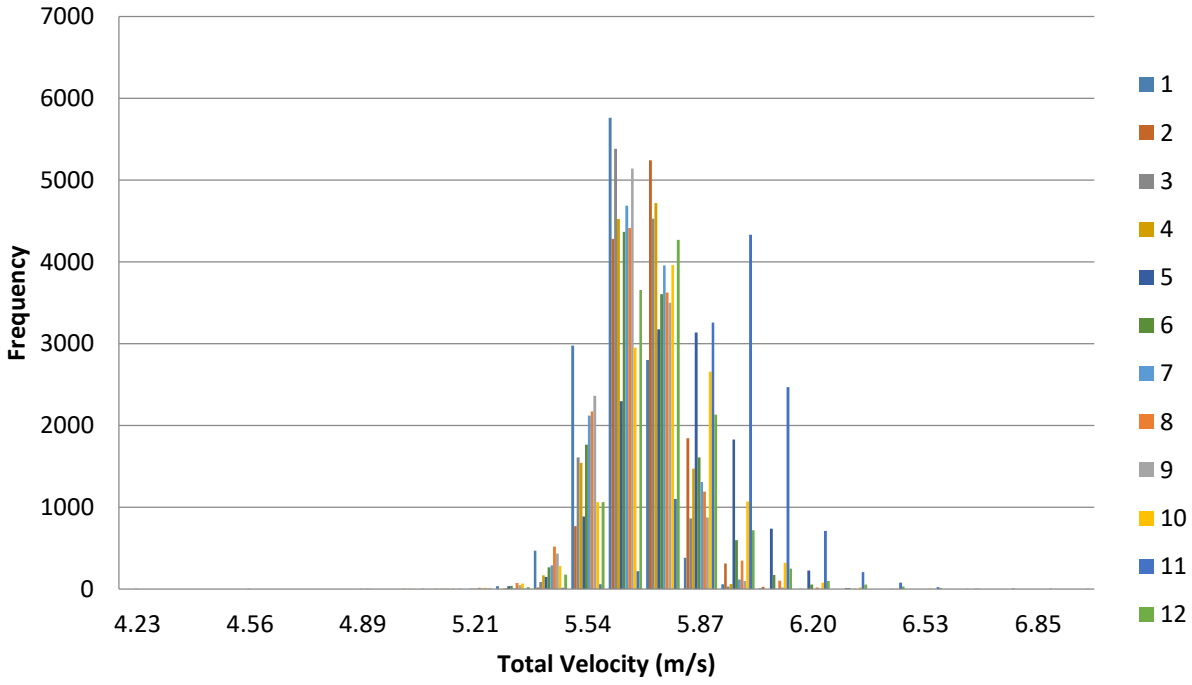
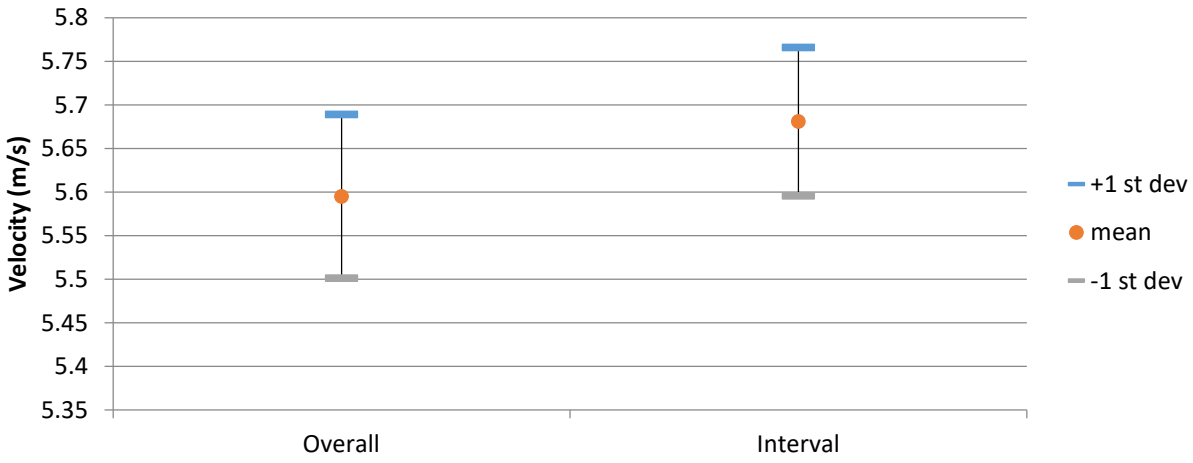
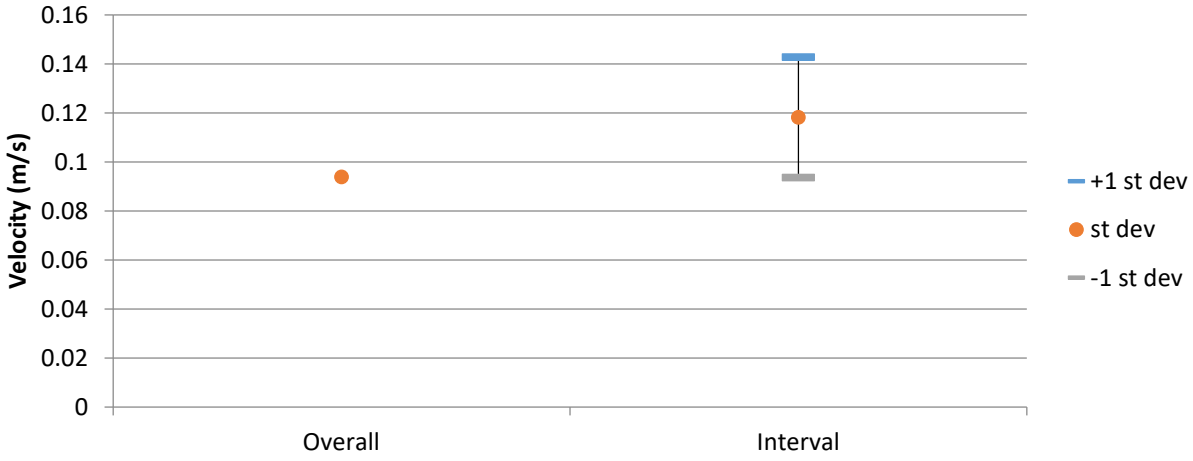


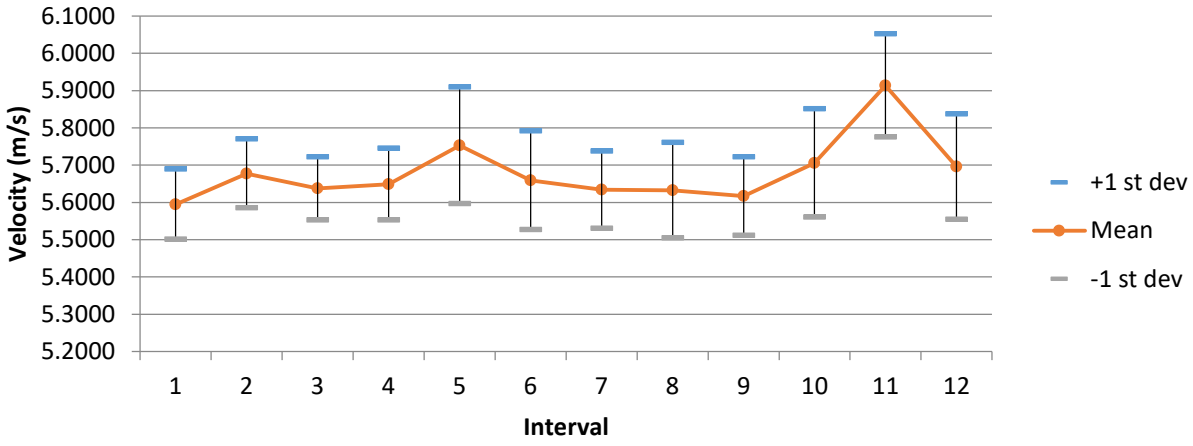
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 321
Blockage Condition: No Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 11-Sep-13 First Sample Time: 09:50:06.343

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	9.4157	12.9119	11.0086	0.2807
u	9.2700	12.5000	10.6016	0.2921
v	-5.4300	3.8800	-0.8348	1.1423
w	-5.9300	0.9000	-2.4520	0.8802

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	12.0569	9.4157	11.1041	0.2368	2.1324
2	11.6296	10.0884	10.8321	0.1967	1.8162
3	11.6502	10.2108	10.9180	0.1904	1.7441
4	11.6492	10.3158	10.9608	0.1765	1.6105
5	12.0217	9.6800	10.9019	0.1990	1.8256
6	11.7749	9.8873	10.9351	0.2086	1.9077
7	12.3326	10.1072	11.1862	0.2675	2.3917
8	12.7599	10.3318	11.2847	0.2701	2.3932
9	12.9119	10.3632	11.3203	0.3158	2.7895
10	12.3596	9.9694	10.9607	0.2559	2.3344
11	11.6871	10.1999	10.8809	0.1908	1.7539
12	11.4886	10.2414	10.8191	0.1649	1.5241
		Average	11.0087	0.2228	
		St Dev	0.1724	0.0459	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.5068	-1.7969	-2.9397	0.2468	0.6735	0.7616	2.3486	6.4097	7.2487
2	10.5281	-0.5325	-2.3899	0.1865	0.3537	0.6154	1.7711	3.3594	5.8456
3	10.5393	-1.8386	-2.0462	0.1797	0.3922	0.6392	1.7050	3.7213	6.0646
4	10.5120	-0.8867	-2.9126	0.1817	0.4546	0.3971	1.7286	4.3247	3.7776
5	10.5372	-0.3743	-2.5794	0.2205	0.6511	0.7695	2.0930	6.1791	7.3027
6	10.7893	-0.5767	-1.3468	0.2277	0.7964	0.6156	2.1105	7.3817	5.7058
7	10.7124	1.1635	-2.8234	0.2722	0.6037	0.8259	2.5410	5.6358	7.7100
8	11.0175	0.4498	-1.9312	0.2700	0.9667	1.0459	2.4506	8.7744	9.4928
9	10.6372	-2.0669	-3.0150	0.3818	0.9163	0.8664	3.5895	8.6137	8.1447
10	10.5481	-1.8382	-2.0276	0.2200	0.8099	0.8634	2.0857	7.6786	8.1850
11	10.3861	-1.0622	-2.9373	0.2833	0.5048	0.6843	2.7272	4.8604	6.5891
12	10.5058	-0.6580	-2.4755	0.1751	0.2326	0.2504	1.6669	2.2142	2.3835

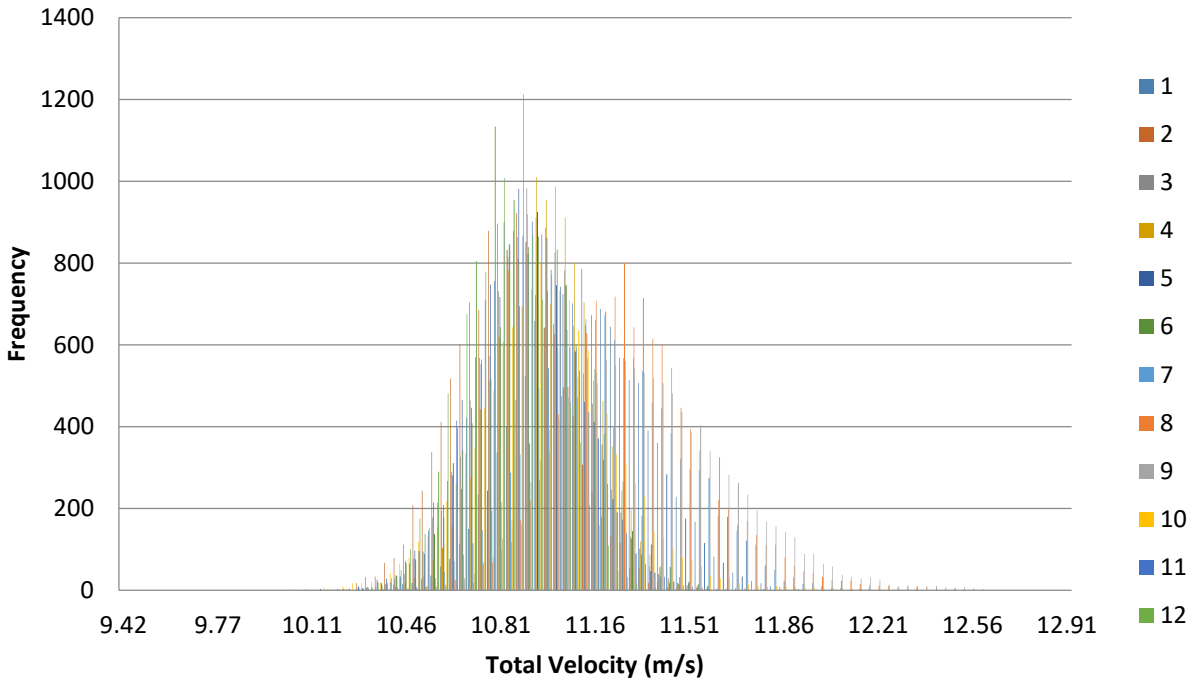


Figure 1. Velocity histogram for each interval (100 bins).

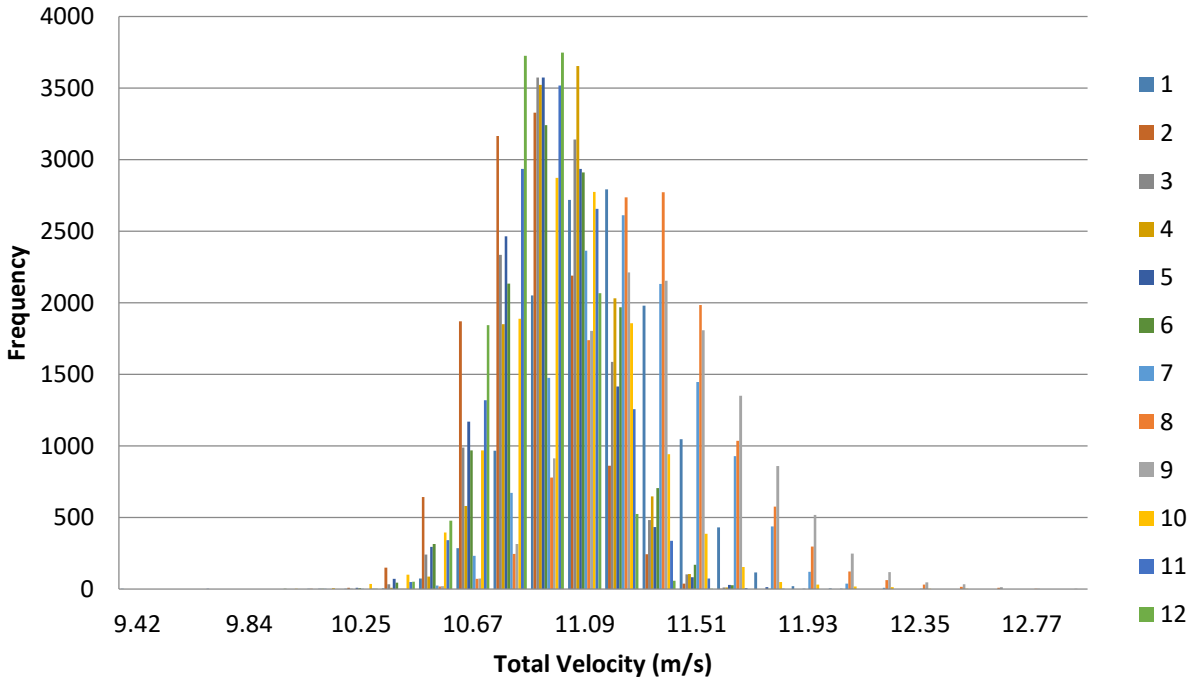
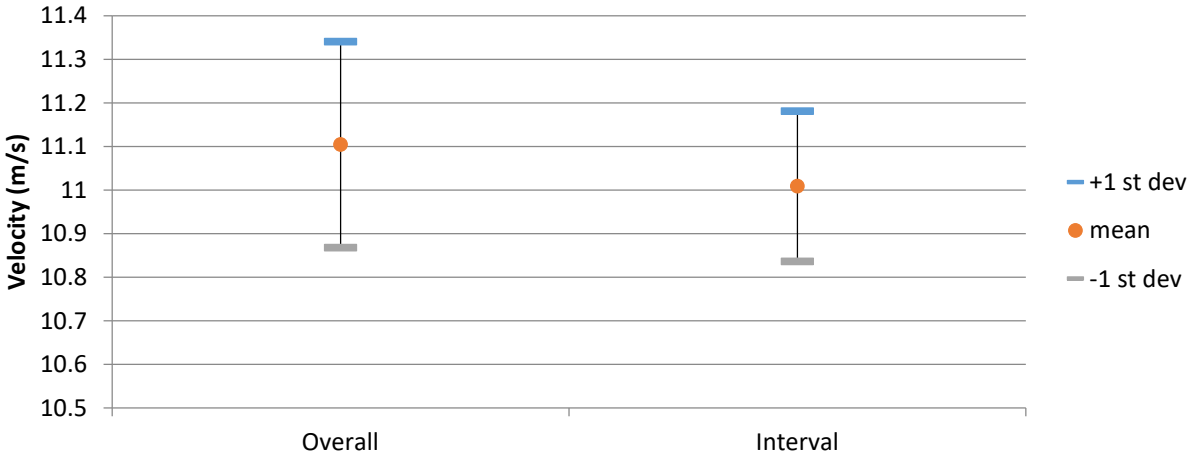
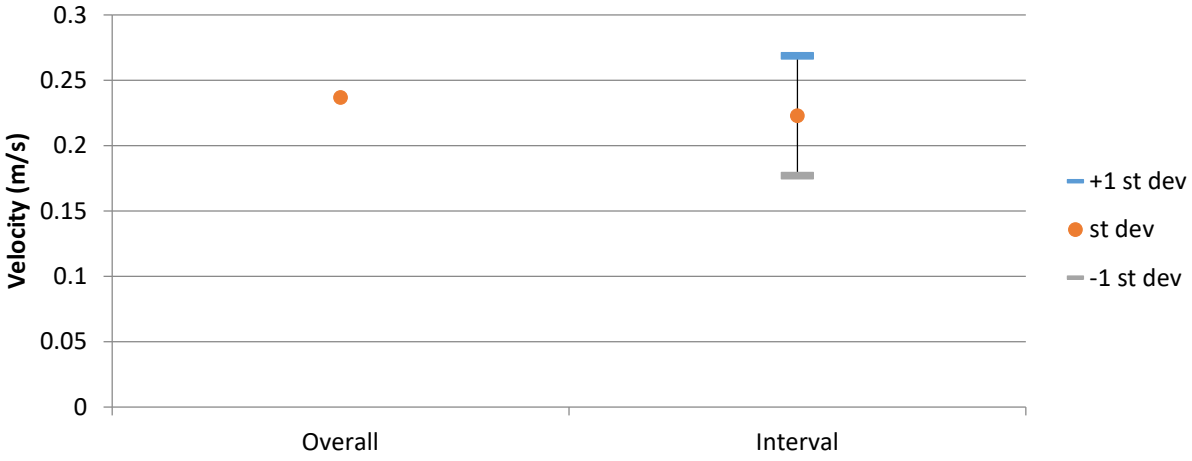


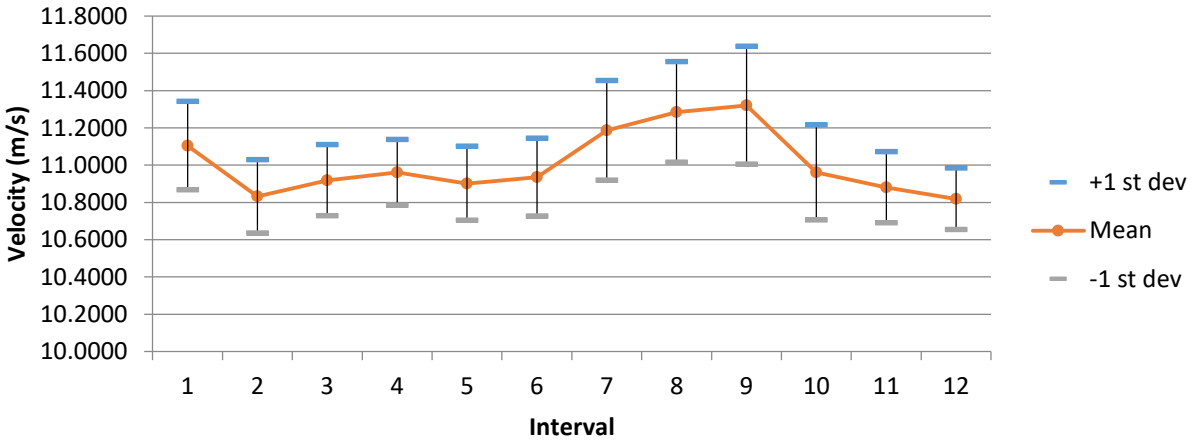
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 322
Blockage Condition: No Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 11-Sep-13 First Sample Time: 09:57:46.812

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	4.8412	6.5424	5.6707	0.0994
u	4.6700	6.4200	5.4624	0.1446
v	-1.8800	1.4100	-0.1289	0.4373
w	-2.6400	1.1900	-1.3539	0.5168

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	6.2044	4.8412	5.6219	0.1079	1.9188
2	5.9704	5.4124	5.7034	0.0747	1.3102
3	6.0676	5.2753	5.7051	0.0827	1.4496
4	6.0139	5.3718	5.6916	0.0850	1.4930
5	6.0846	5.3250	5.6472	0.0920	1.6289
6	5.9913	5.3027	5.6592	0.0769	1.3588
7	6.0525	5.3336	5.6921	0.0896	1.5746
8	6.0223	5.3646	5.6857	0.0846	1.4887
9	6.1627	5.0944	5.6448	0.1058	1.8740
10	6.4304	4.9672	5.6629	0.1405	2.4811
11	6.5424	4.9611	5.6932	0.1071	1.8809
12	6.0298	5.1798	5.6416	0.0827	1.4663
		Average	5.6707	0.0941	
		St Dev	0.0278	0.0185	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.3950	-0.5443	-1.4141	0.0972	0.3443	0.2963	1.8016	6.3821	5.4916
2	5.5042	0.0111	-1.4577	0.0975	0.2233	0.2328	1.7722	4.0576	4.2295
3	5.5332	-0.3515	-1.2572	0.1013	0.2704	0.3888	1.8305	4.8876	7.0272
4	5.4712	-0.3867	-1.3785	0.1654	0.3179	0.5375	3.0237	5.8110	9.8241
5	5.2799	0.1560	-1.9482	0.1556	0.2964	0.3007	2.9477	5.6143	5.6943
6	5.4227	-0.0810	-1.5769	0.0980	0.2500	0.2473	1.8065	4.6112	4.5612
7	5.3700	-0.0378	-1.8370	0.1254	0.3287	0.2676	2.3357	6.1212	4.9839
8	5.4952	-0.4009	-1.2492	0.1178	0.3819	0.5065	2.1442	6.9491	9.2172
9	5.4617	-0.0328	-1.3361	0.1172	0.3323	0.3667	2.1456	6.0845	6.7142
10	5.5256	-0.5149	-0.8098	0.1507	0.4432	0.6447	2.7275	8.0209	11.6683
11	5.5425	0.4982	-1.0502	0.1117	0.3229	0.4873	2.0149	5.8268	8.7921
12	5.5480	0.1376	-0.9325	0.0912	0.2005	0.3434	1.6433	3.6132	6.1898

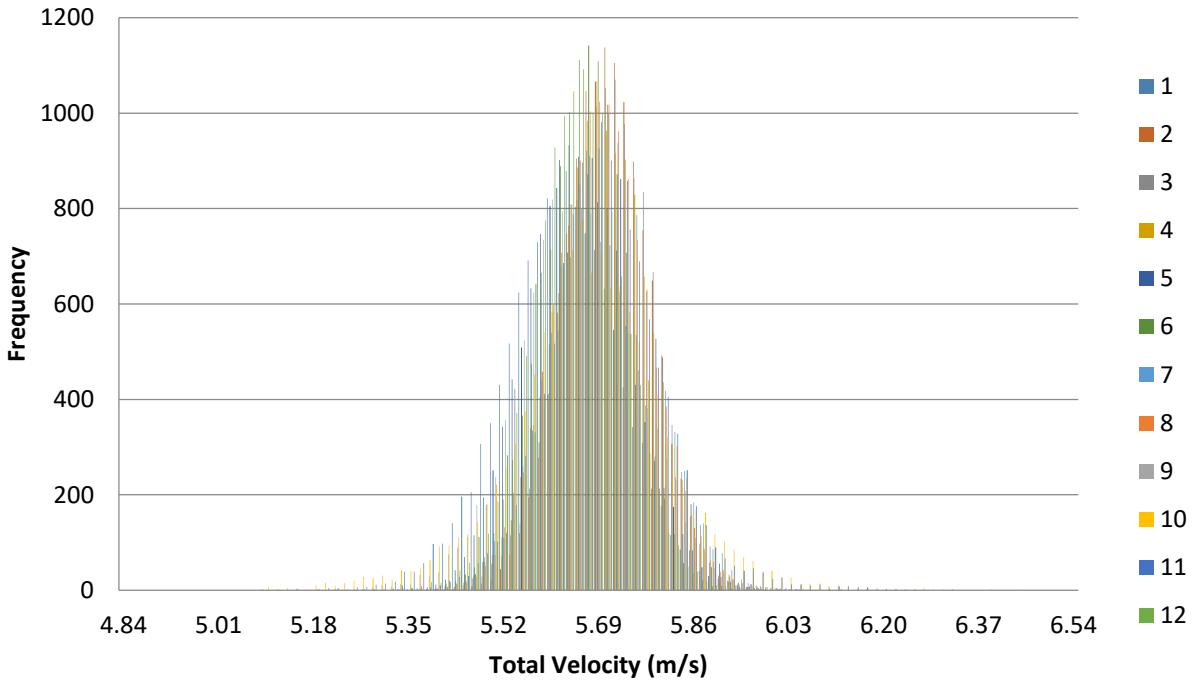


Figure 1. Velocity histogram for each interval (100 bins).

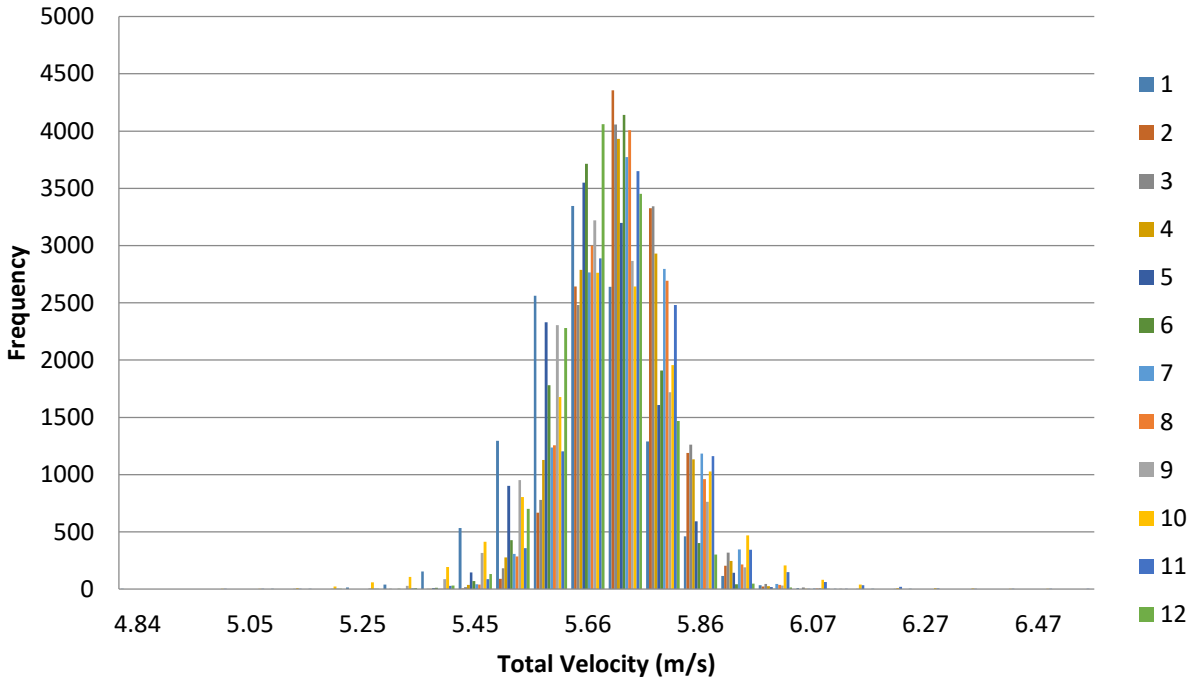
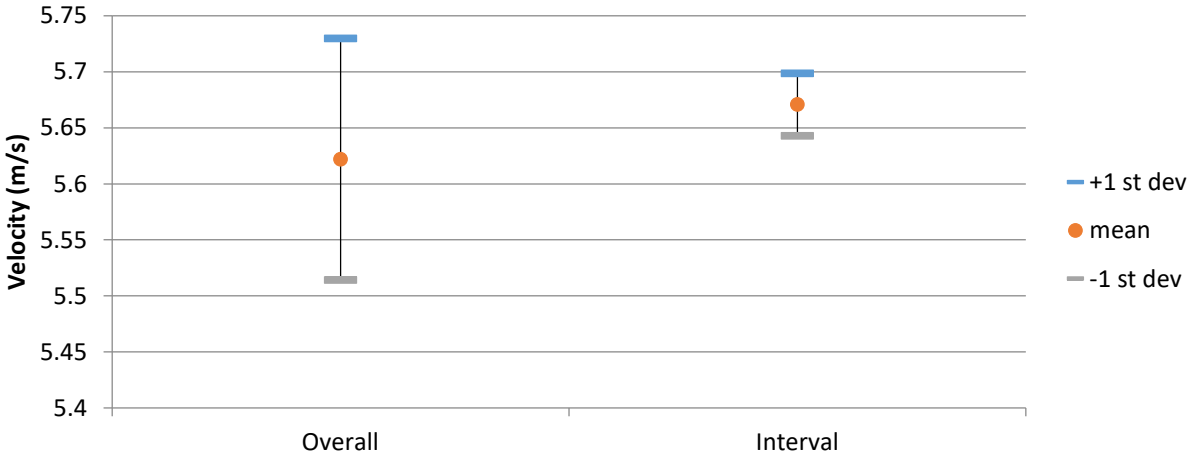
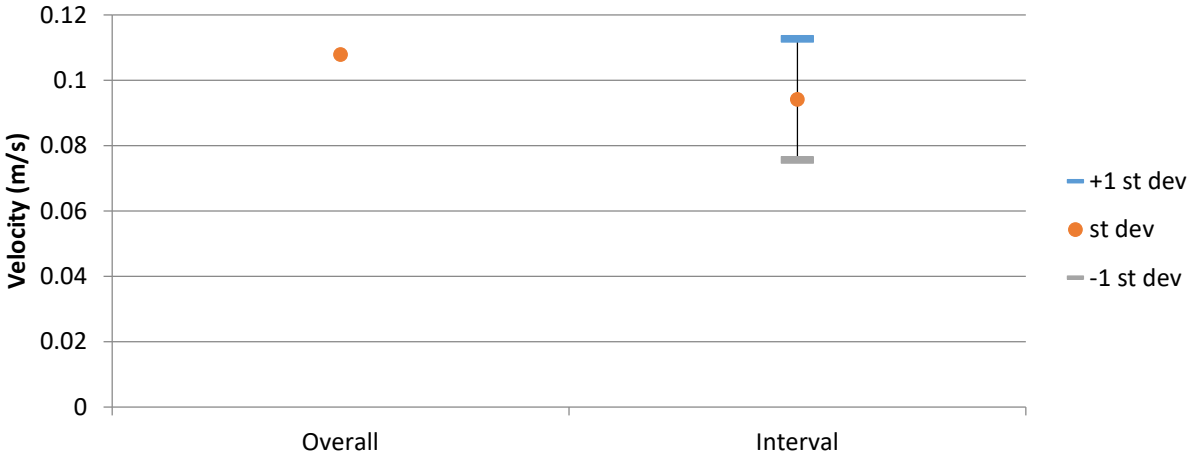


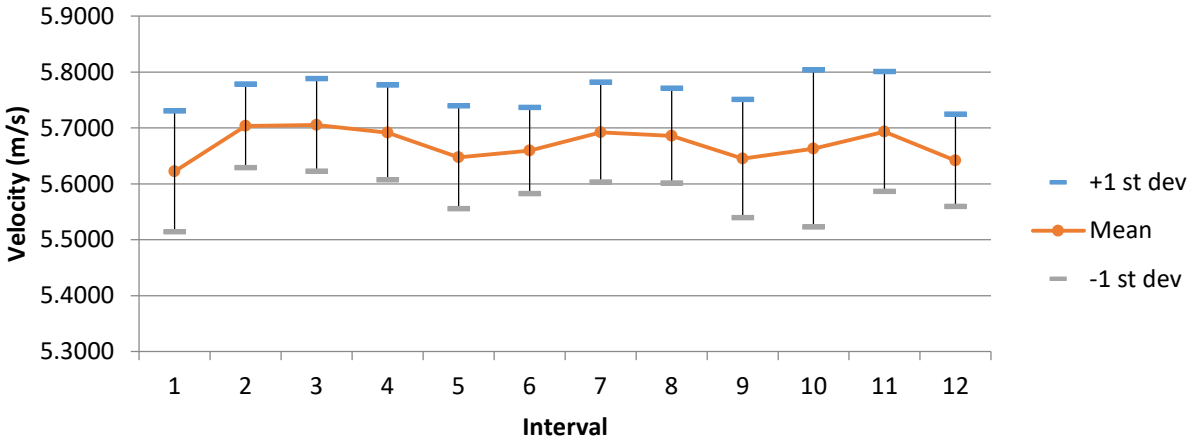
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 323
Blockage Condition: Existing Buildings.
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 11-Sep-13 First Sample Time: 10:13:05.562

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.2867	6.2926	5.6494	0.0868
u	4.8300	6.0700	5.4760	0.1196
v	-1.2500	1.4500	0.0374	0.4576
w	-2.4700	0.0228	-1.2416	0.4115

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	5.8939	5.3467	5.6267	0.0739	1.3125
2	5.9706	5.3195	5.6355	0.0933	1.6549
3	5.9957	5.3397	5.6492	0.0809	1.4327
4	6.2926	5.2873	5.6783	0.0966	1.7007
5	6.0195	5.3523	5.6778	0.0996	1.7542
6	5.9814	5.2867	5.6540	0.0836	1.4781
7	5.9733	5.3500	5.6642	0.0805	1.4221
8	6.1648	5.3166	5.6532	0.0759	1.3421
9	5.9568	5.3918	5.6731	0.0819	1.4441
10	5.9012	5.3171	5.6109	0.0734	1.3081
11	6.1604	5.2996	5.6274	0.0902	1.6035
12	5.9562	5.3110	5.6418	0.0761	1.3483
		Average	5.6494	0.0838	
		St Dev	0.0217	0.0090	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.4871	-0.3611	-1.1596	0.0787	0.2215	0.1639	1.4347	4.0375	2.9864
2	5.4628	-0.4423	-1.2303	0.0889	0.3396	0.3063	1.6281	6.2162	5.6067
3	5.5786	-0.0691	-0.8460	0.0808	0.2115	0.1658	1.4479	3.7904	2.9719
4	5.4505	0.1452	-1.3649	0.1764	0.5413	0.5805	3.2371	9.9308	10.6501
5	5.3550	0.5967	-1.7180	0.1525	0.2653	0.4137	2.8488	4.9541	7.7256
6	5.4481	0.5235	-1.3532	0.1015	0.2366	0.3490	1.8631	4.3430	6.4050
7	5.4406	0.3130	-1.5040	0.0975	0.2402	0.2489	1.7929	4.4148	4.5742
8	5.4526	-0.0452	-1.4629	0.0868	0.1759	0.2304	1.5924	3.2251	4.2263
9	5.4608	0.3774	-1.4434	0.0793	0.2945	0.2265	1.4530	5.3928	4.1472
10	5.4810	-0.1066	-1.1668	0.0826	0.2117	0.1465	1.5071	3.8623	2.6727
11	5.5504	0.0591	-0.8220	0.1013	0.3052	0.2938	1.8256	5.4987	5.2932
12	5.5448	-0.5410	-0.8278	0.0824	0.2360	0.2249	1.4856	4.2559	4.0553

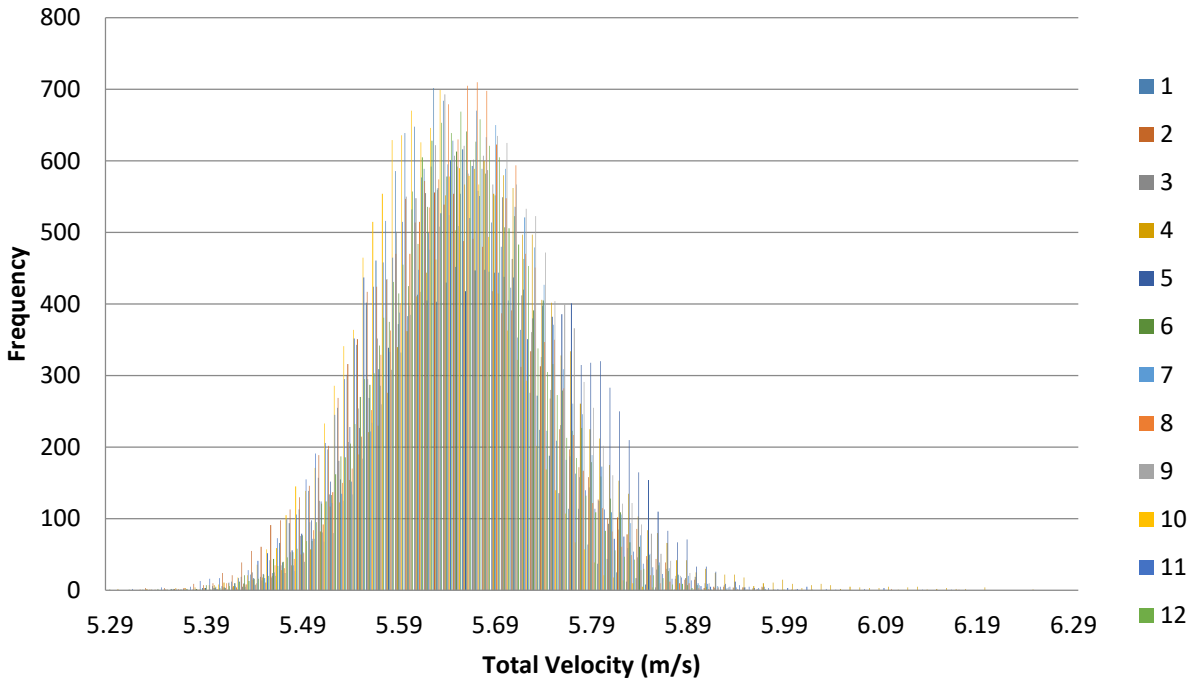


Figure 1. Velocity histogram for each interval (100 bins).

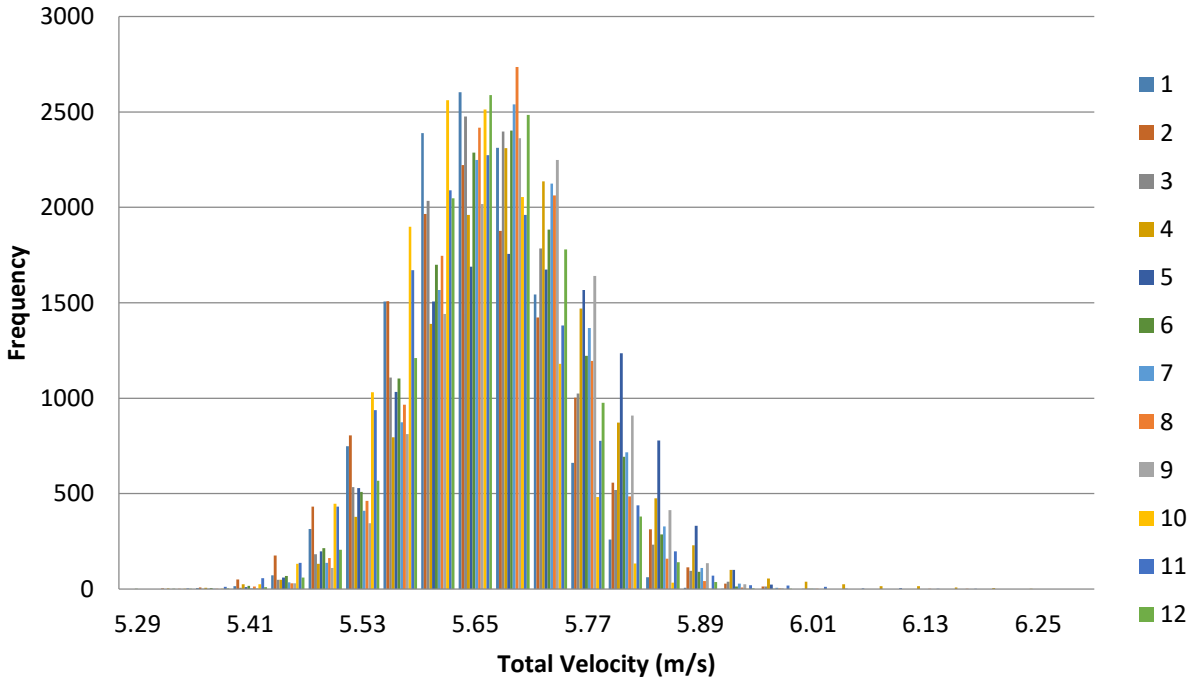
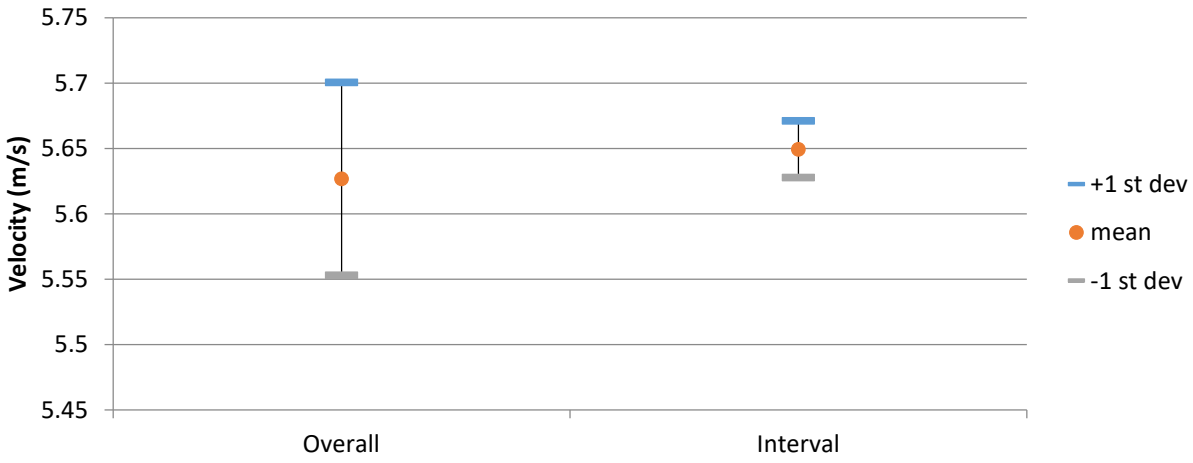
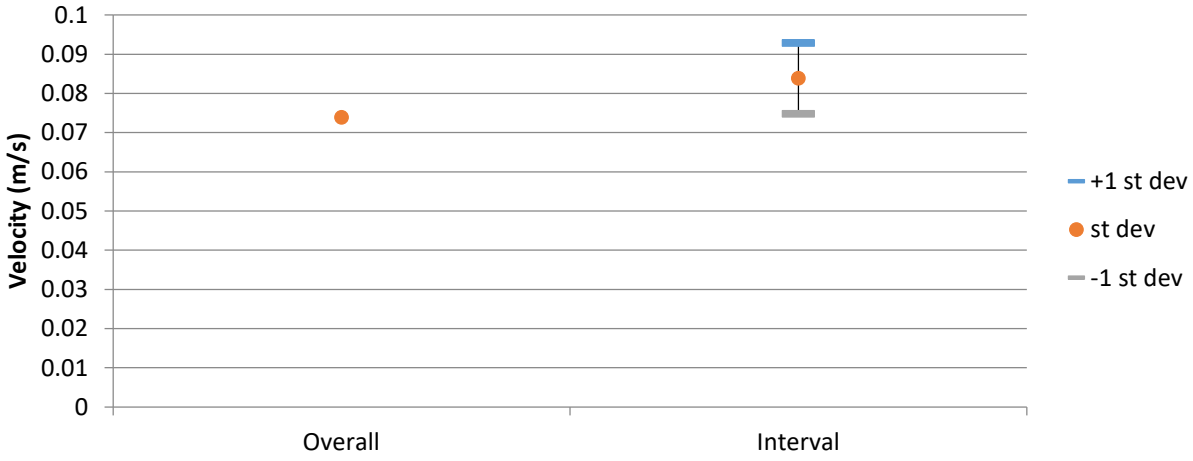


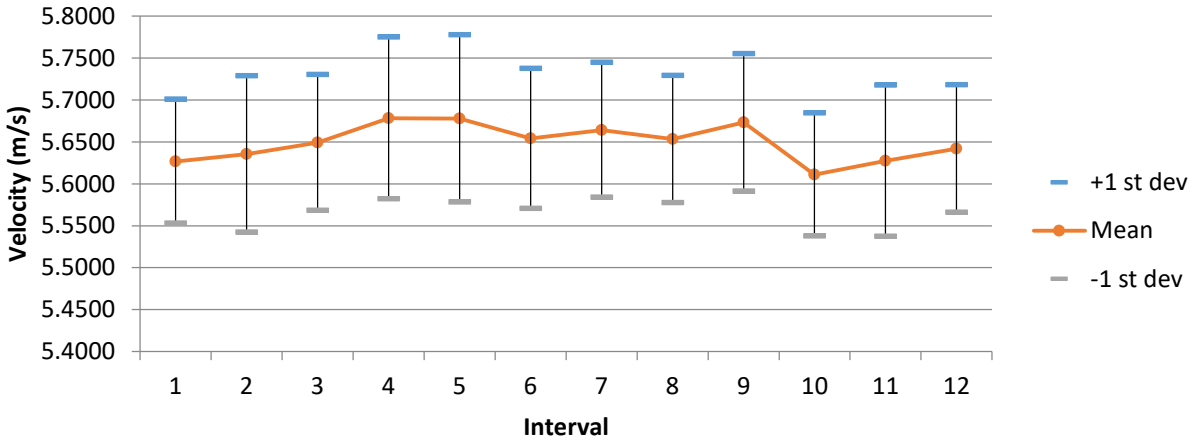
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 324
Blockage Condition: Existing Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 11-Sep-13 First Sample Time: 10:18:15.484

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	9.6073	12.3808	10.9090	0.2034
u	9.3000	11.8000	10.5713	0.2208
v	-5.0800	2.4200	-0.3270	0.6752
w	-4.8900	0.5530	-2.4851	0.7125

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.4218	10.0426	10.8280	0.1770	1.6346
2	11.5339	10.0543	10.8597	0.1881	1.7324
3	11.5239	10.1197	10.8552	0.1895	1.7455
4	11.9021	9.9042	10.8647	0.2253	2.0739
5	11.8562	10.1988	10.9512	0.2004	1.8297
6	11.5949	10.1917	10.9099	0.1828	1.6752
7	12.3808	9.9668	10.9465	0.2406	2.1978
8	11.7886	9.6073	10.9083	0.2143	1.9649
9	11.6306	10.1690	10.9799	0.1845	1.6799
10	11.7959	10.1972	10.9713	0.1998	1.8210
11	11.6053	10.2066	10.8977	0.1793	1.6454
12	11.5811	10.1745	10.9357	0.1806	1.6515
		Average	10.9090	0.1968	
		St Dev	0.0493	0.0202	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.5103	-0.4660	-2.5092	0.1817	0.2072	0.4702	1.7286	1.9712	4.4741
2	10.4938	-1.0347	-2.5039	0.1879	0.4158	0.5482	1.7904	3.9628	5.2238
3	10.6990	-0.4884	-1.6089	0.2085	0.5636	0.4646	1.9485	5.2681	4.3421
4	10.5733	-0.5368	-2.1079	0.2589	0.7845	0.9404	2.4483	7.4197	8.8942
5	10.5509	0.0339	-2.7604	0.2367	0.6804	0.7118	2.2437	6.4483	6.7466
6	10.5188	-0.0982	-2.7753	0.2115	0.5668	0.5780	2.0108	5.3880	5.4953
7	10.5310	-0.4883	-2.6566	0.2584	0.9146	0.8848	2.4533	8.6852	8.4019
8	10.5259	0.0779	-2.7160	0.2339	0.4426	0.7810	2.2224	4.2044	7.4196
9	10.6441	0.1874	-2.5708	0.1936	0.6274	0.4699	1.8192	5.8942	4.4147
10	10.6576	-0.8316	-2.3414	0.1943	0.4592	0.6343	1.8231	4.3085	5.9513
11	10.5864	-0.2865	-2.5077	0.1778	0.4194	0.3770	1.6799	3.9620	3.5613
12	10.5644	0.0068	-2.7640	0.1769	0.3622	0.4602	1.6742	3.4284	4.3564

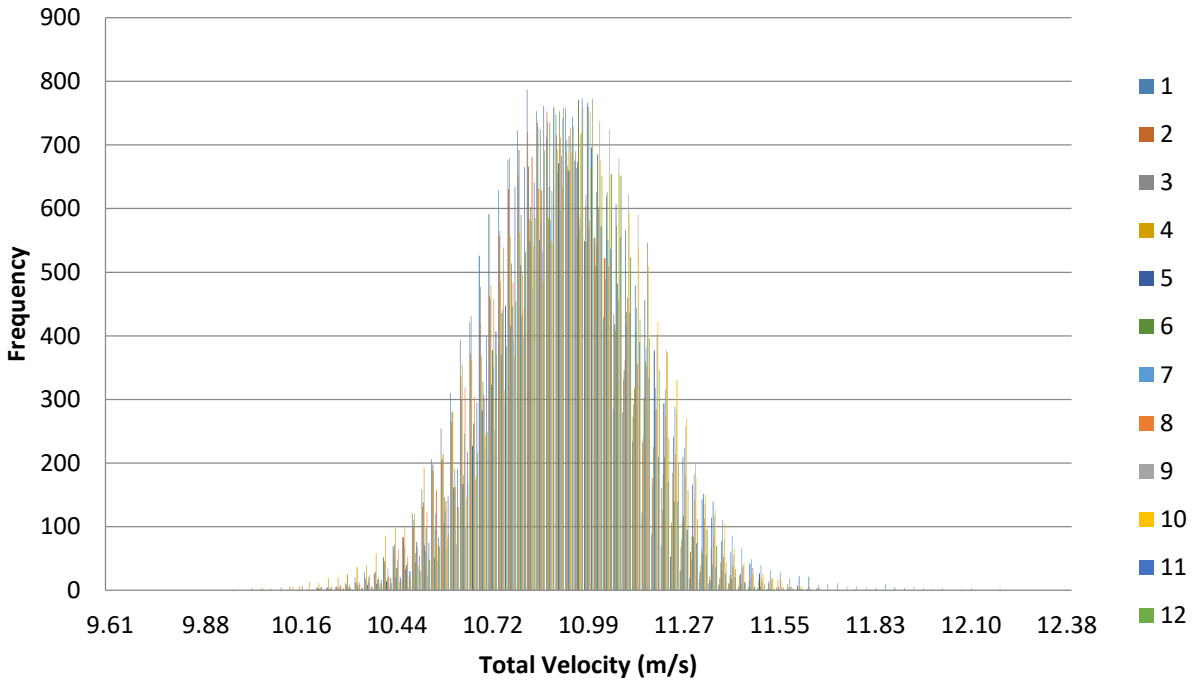


Figure 1. Velocity histogram for each interval (100 bins).

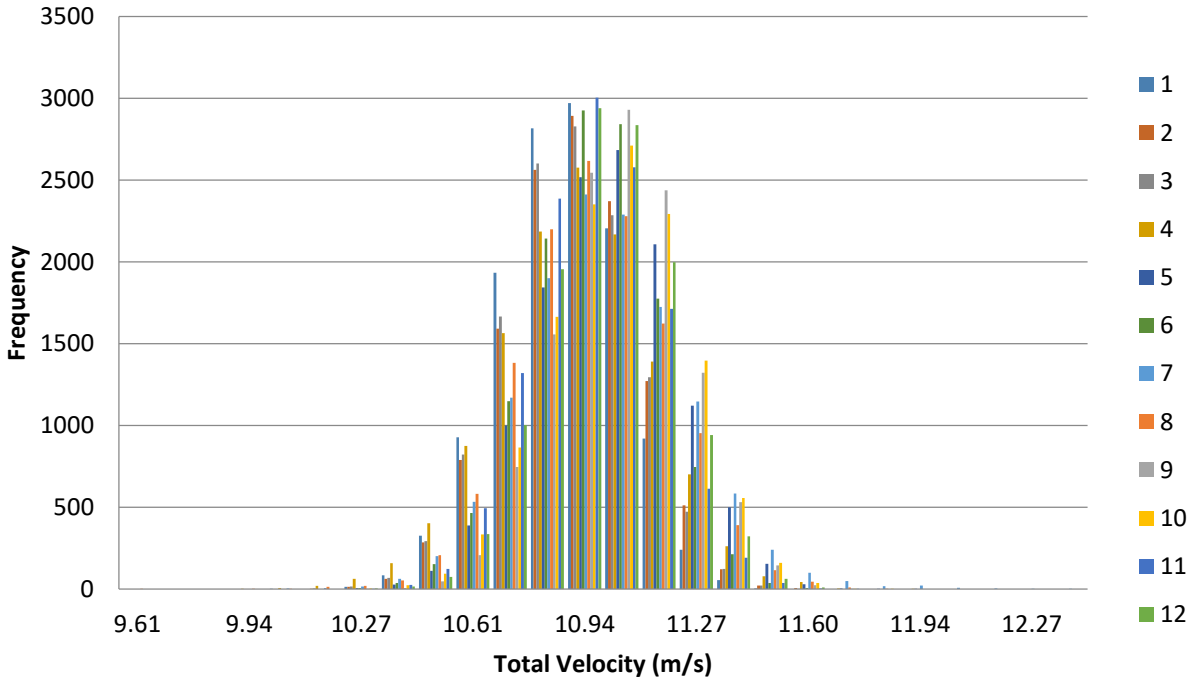
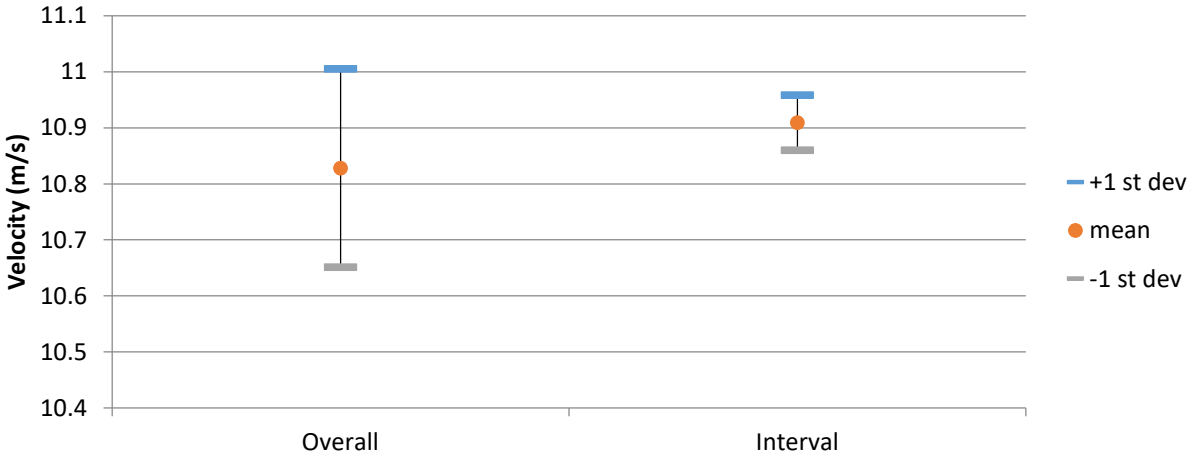
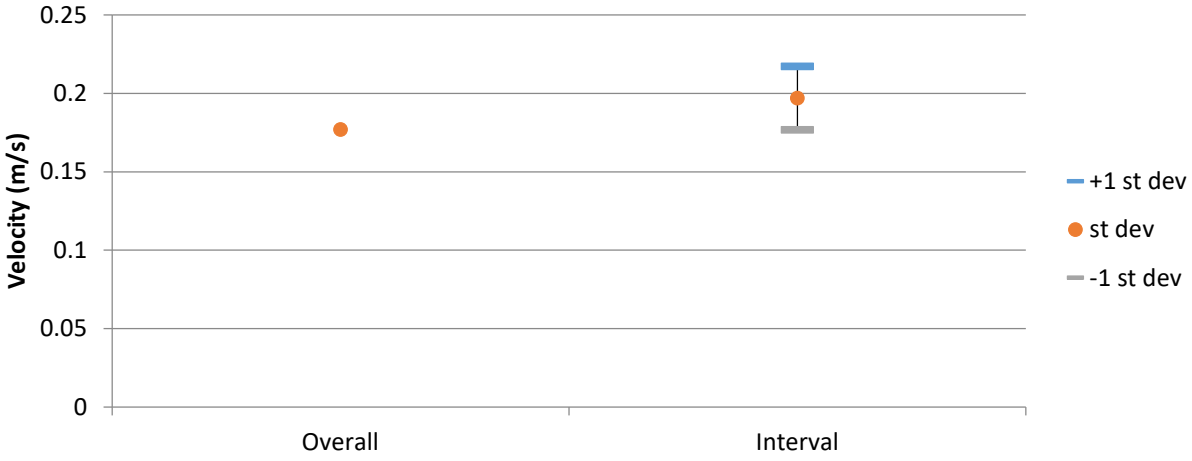


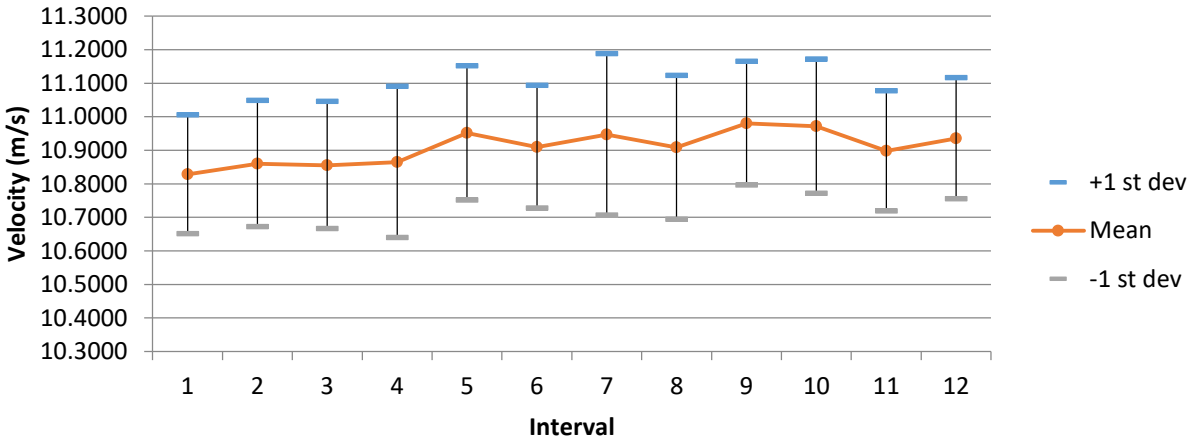
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 325
Blockage Condition: All Buildings.
Blower Frequency: 50 Hz
Inlet Probe Location: E3
First Sample Date: 11-Sep-13 First Sample Time: 10:31:02.515

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	10.0593	11.9506	10.9578	0.2163
u	9.1400	11.6000	10.5081	0.2979
v	-1.9600	3.1100	0.4797	0.6848
w	-5.2000	-0.3380	-2.8831	0.7751

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	11.6201	10.1420	10.9624	0.1841	1.6795
2	11.5776	10.0593	10.8909	0.1975	1.8130
3	11.5266	10.1751	10.8630	0.1833	1.6874
4	11.6270	10.0906	10.8316	0.2095	1.9340
5	11.8020	10.2907	11.0286	0.1958	1.7750
6	11.6206	10.2825	10.9715	0.1789	1.6306
7	11.8334	10.2504	11.0346	0.1991	1.8045
8	11.9506	10.0923	10.9847	0.2885	2.6262
9	11.9053	10.2600	11.0473	0.2497	2.2599
10	11.7137	10.2536	10.9665	0.1806	1.6469
11	11.6109	10.2182	10.9695	0.1891	1.7242
12	11.6068	10.1472	10.9427	0.1935	1.7680
		Average	10.9578	0.2041	
		St Dev	0.0672	0.0326	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	10.5365	0.7732	-2.8472	0.2150	0.4436	0.4932	2.0402	4.2105	4.6804
2	10.5883	0.4239	-2.4145	0.2122	0.4901	0.4944	2.0041	4.6292	4.6691
3	10.6481	0.2852	-2.0340	0.1975	0.4550	0.4368	1.8544	4.2730	4.1017
4	10.6514	-0.2017	-1.7382	0.2391	0.7057	0.5445	2.2449	6.6256	5.1117
5	10.6500	0.4307	-2.6927	0.2213	0.6293	0.6039	2.0778	5.9086	5.6706
6	10.5956	-0.2093	-2.7843	0.1857	0.4174	0.3676	1.7527	3.9398	3.4697
7	10.5475	0.1718	-3.0752	0.2900	0.6570	0.7417	2.7491	6.2286	7.0316
8	10.2490	0.7615	-3.8089	0.4099	0.4949	0.4528	3.9991	4.8284	4.4183
9	10.3317	1.1845	-3.6533	0.3742	0.5753	0.3748	3.6221	5.5683	3.6277
10	10.4073	0.4895	-3.3222	0.2577	0.7051	0.3811	2.4763	6.7749	3.6622
11	10.4415	0.7349	-3.2071	0.2626	0.4362	0.5050	2.5148	4.1778	4.8365
12	10.4497	0.9101	-3.0193	0.2710	0.4772	0.5814	2.5938	4.5667	5.5638

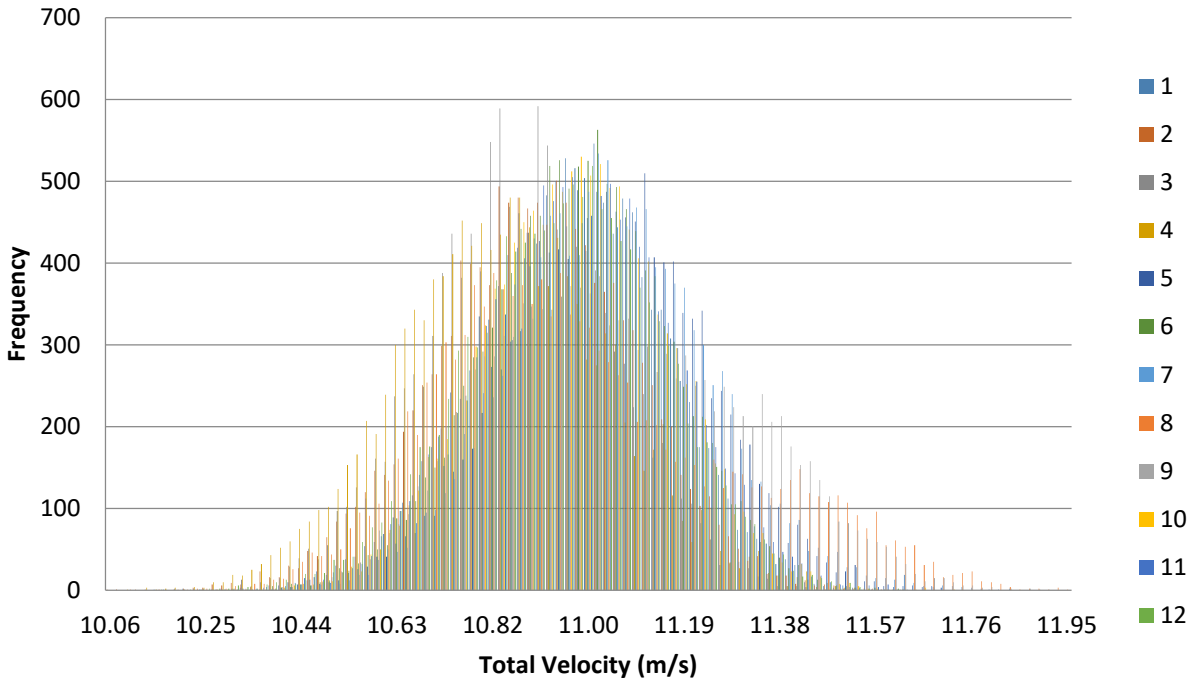


Figure 1. Velocity histogram for each interval (100 bins).

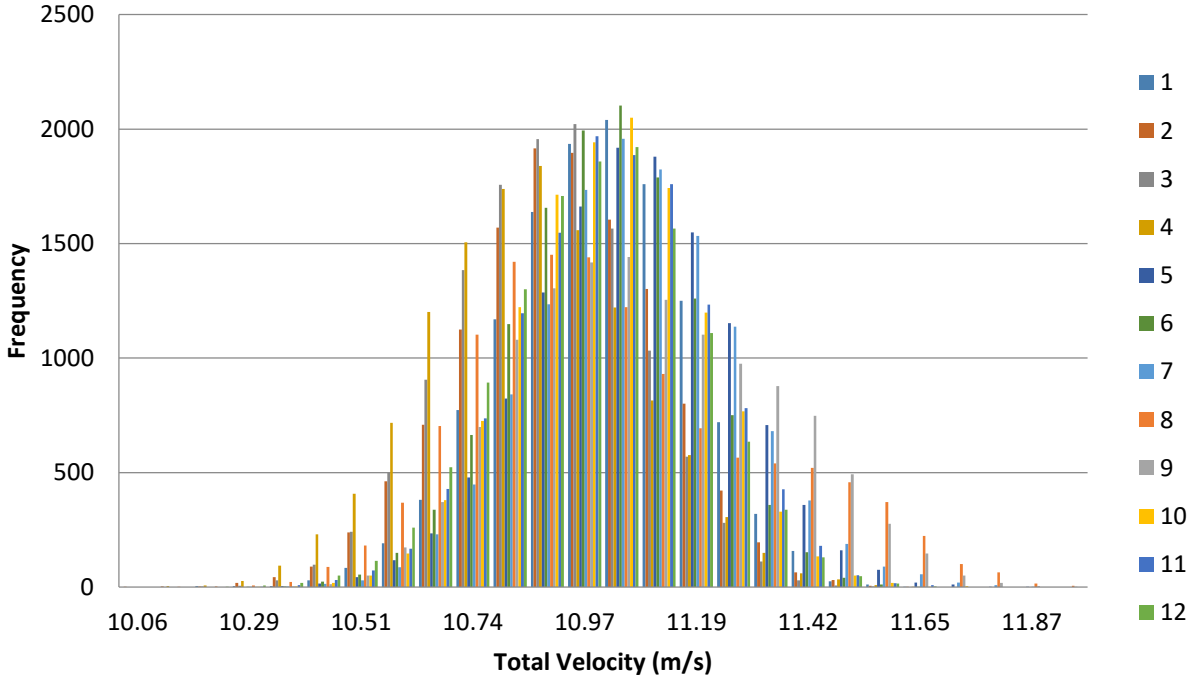
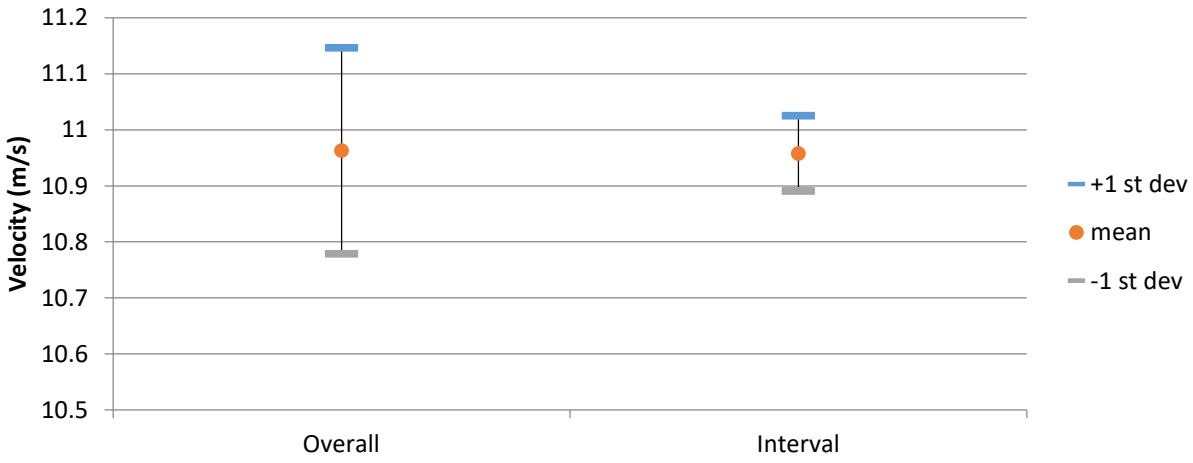
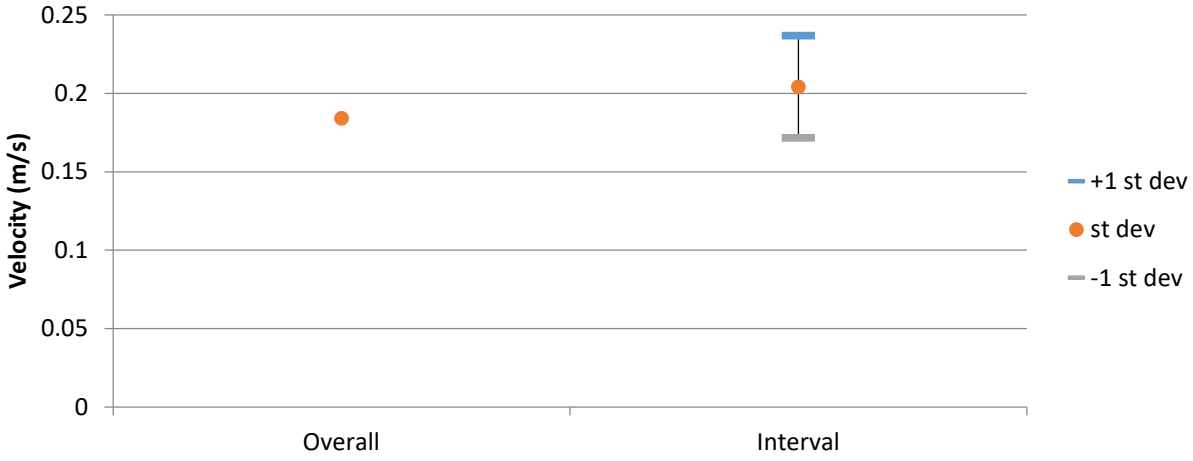


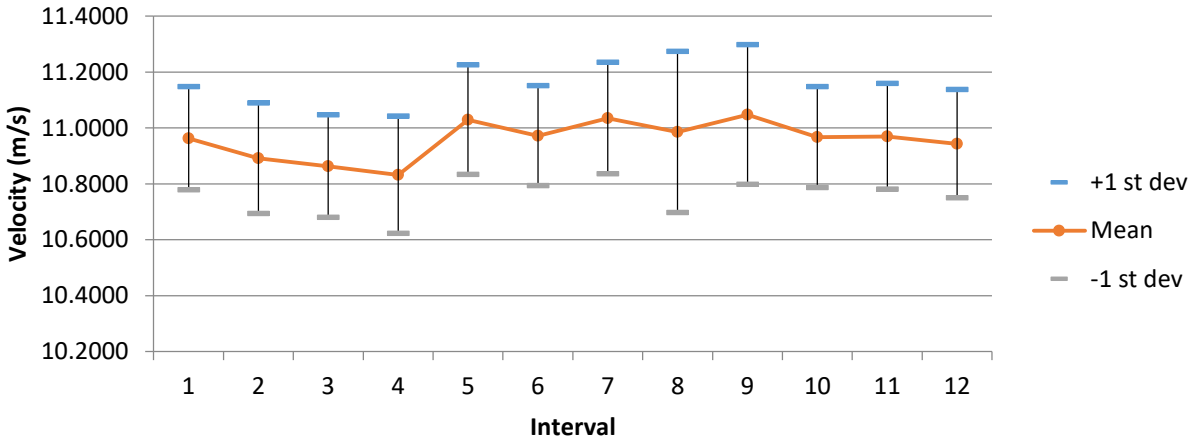
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.

Run 326
Blockage Condition: All buildings
Blower Frequency: 25 Hz
Inlet Probe Location: E3
First Sample Date: 11-Sep-13 First Sample Time: 10:38:04.984

Table 1. Total velocity and velocity component data for entire run.

	Min (m/s)	Max (m/s)	Mean (m/s)	St Dev (m/s)
Total Velocity	5.0875	7.8925	5.7274	0.1240
u	3.9800	6.1900	5.4572	0.1671
v	-1.8000	2.3200	0.0575	0.4898
w	-5.7100	-0.4330	-1.5898	0.4894

Table 2. Total velocity data for each interval with turbulence intensity.

Interval	Max (m/s)	Min (m/s)	Mean (m/s)	St Dev (m/s)	I_{vel} (%)
1	6.0850	5.4202	5.7605	0.1013	1.7584
2	6.2229	5.2874	5.8590	0.1099	1.8755
3	6.3484	5.3213	5.7731	0.1595	2.7635
4	6.2285	5.4046	5.7452	0.0881	1.5338
5	6.5304	5.1363	5.7747	0.1286	2.2262
6	7.8925	5.0875	5.6874	0.1161	2.0410
7	6.2183	5.4210	5.8170	0.1052	1.8081
8	6.2066	5.4088	5.7206	0.0980	1.7128
9	5.9251	5.3673	5.6518	0.0723	1.2799
10	5.9018	5.3352	5.6602	0.0747	1.3195
11	5.8939	5.3655	5.6324	0.0680	1.2075
12	5.9055	5.4156	5.6474	0.0663	1.1738
		Average	5.7274	0.0990	
		St Dev	0.0729	0.0277	

Table 3. Velocity component data for each interval with turbulence intensity.

Interval	μ_u (m/s)	μ_v (m/s)	μ_w (m/s)	σ_u (m/s)	σ_v (m/s)	σ_w (m/s)	I_u (%)	I_v (%)	I_w (%)
1	5.4421	0.6841	-1.7015	0.1503	0.2858	0.3300	2.7621	5.2511	6.0638
2	5.4520	0.7991	-1.9455	0.1657	0.3171	0.2540	3.0387	5.8159	4.6580
3	5.5360	0.5084	-1.4594	0.1298	0.3507	0.4231	2.3443	6.3347	7.6419
4	5.4594	0.1628	-1.7482	0.1065	0.2434	0.2393	1.9506	4.4589	4.3828
5	5.3618	0.0729	-2.1007	0.1785	0.2722	0.3022	3.3290	5.0765	5.6356
6	5.1421	-0.0379	-2.3793	0.1825	0.3946	0.2593	3.5489	7.6741	5.0434
7	5.4558	-0.1154	-1.9524	0.1435	0.4202	0.2466	2.6300	7.7027	4.5196
8	5.5432	-0.6885	-1.1821	0.0985	0.2615	0.2433	1.7778	4.7179	4.3886
9	5.5345	-0.3251	-1.0909	0.0757	0.0898	0.0909	1.3680	1.6219	1.6427
10	5.5370	-0.1529	-1.1420	0.0739	0.1456	0.1745	1.3343	2.6294	3.1508
11	5.5078	-0.1410	-1.1661	0.0715	0.0637	0.0569	1.2982	1.1559	1.0331
12	5.5144	-0.0766	-1.2100	0.0693	0.0746	0.0900	1.2563	1.3530	1.6314

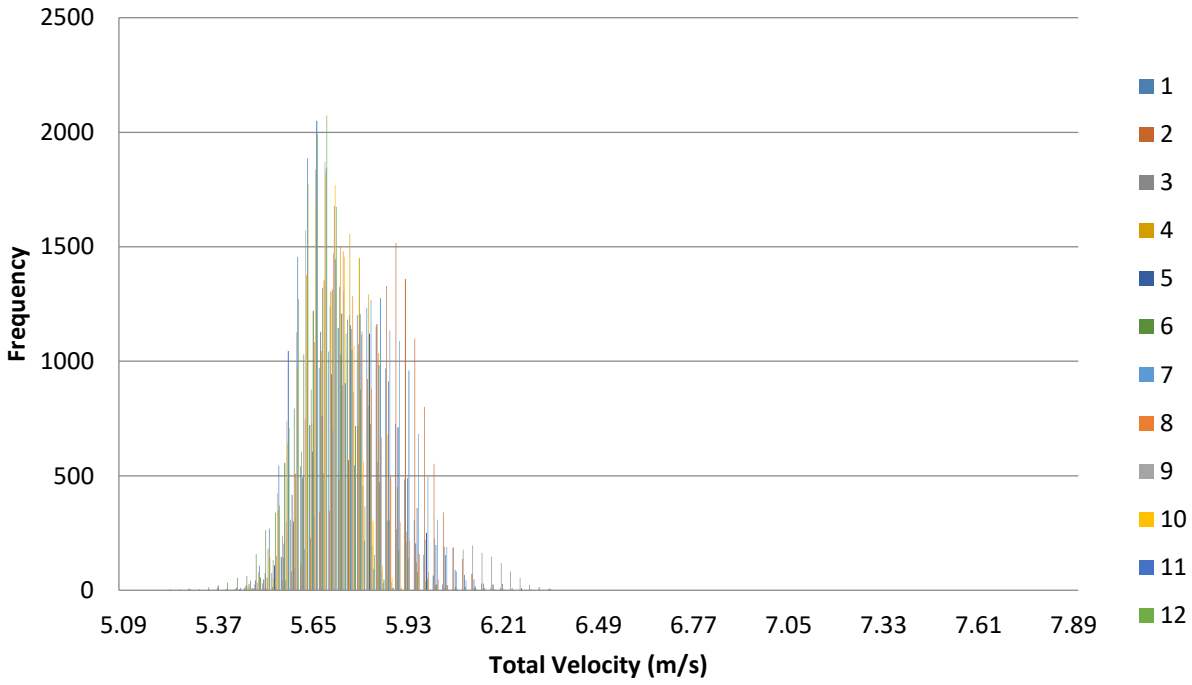


Figure 1. Velocity histogram for each interval (100 bins).

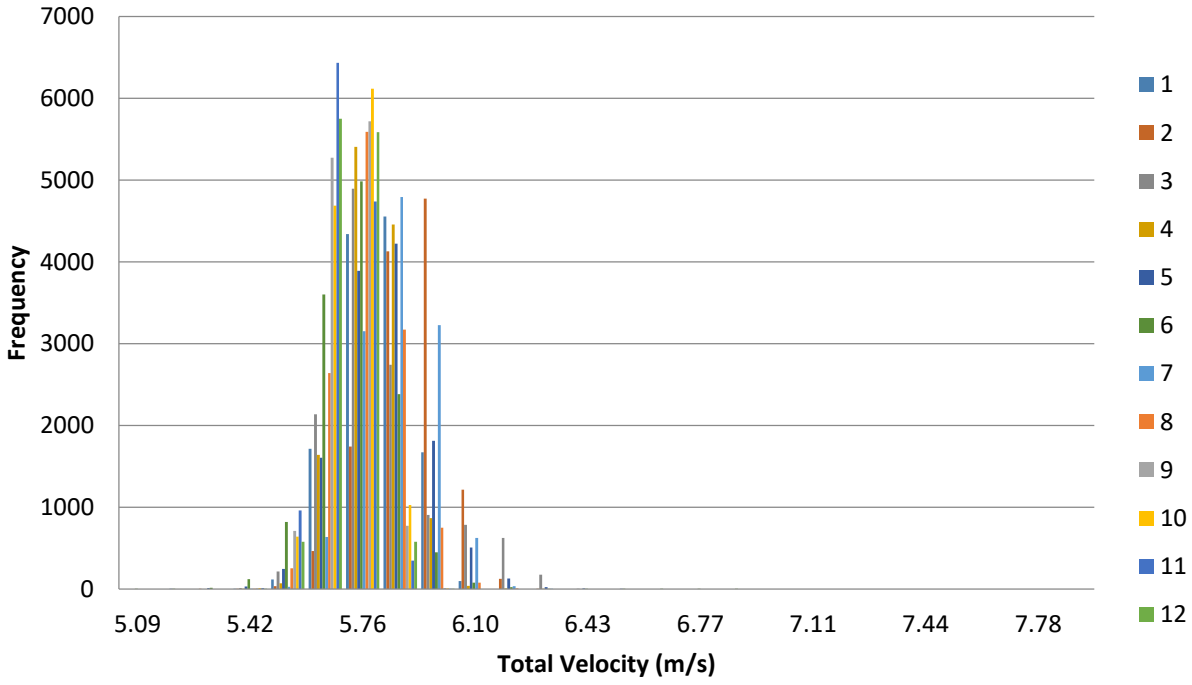
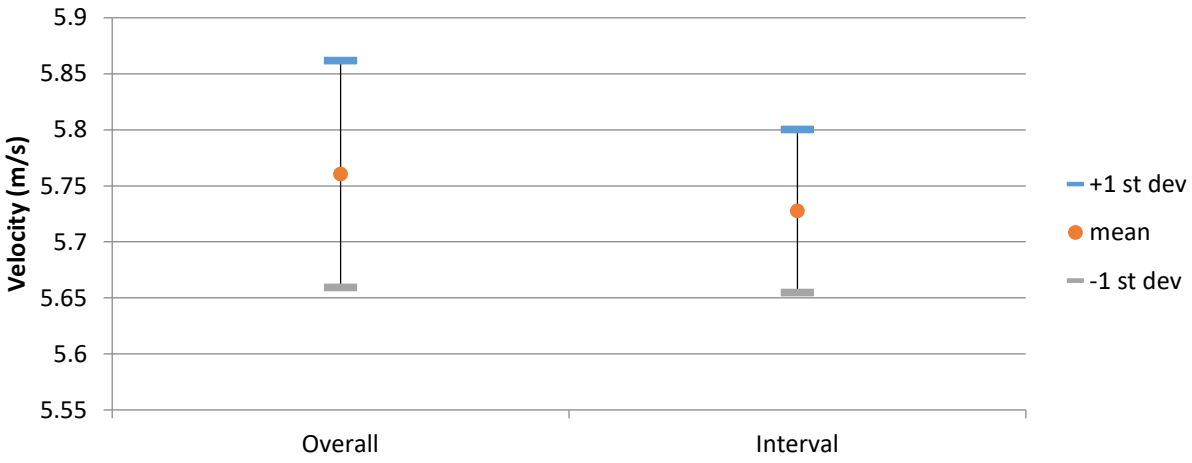
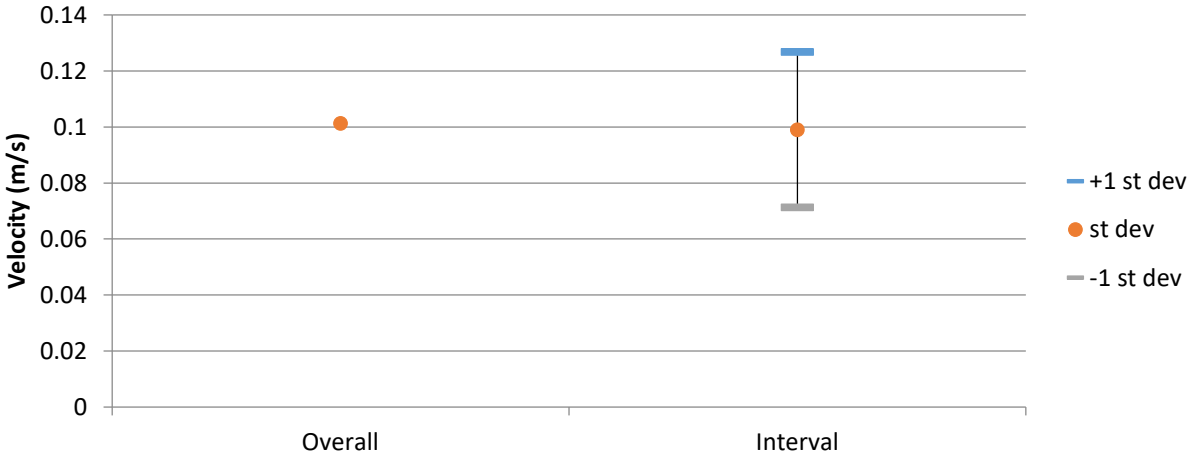


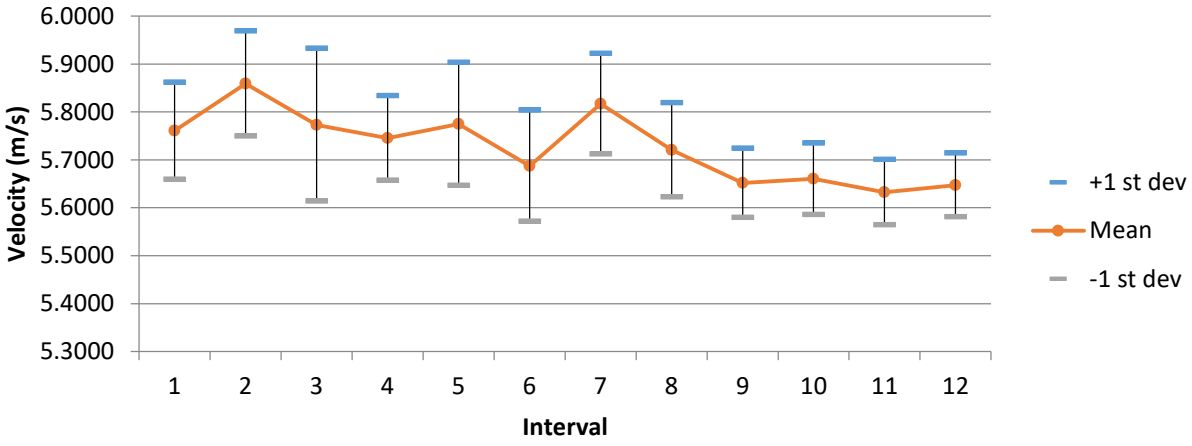
Figure 2. Velocity histogram for each interval (25 bins).



a) Average velocity and standard deviation about the average velocity.



b) RMS velocity fluctuation and standard deviation about the average RMS velocity fluctuation.



c) Average velocity from each 10-second interval.

Figure 3. Total velocity measurements.